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Railway Age

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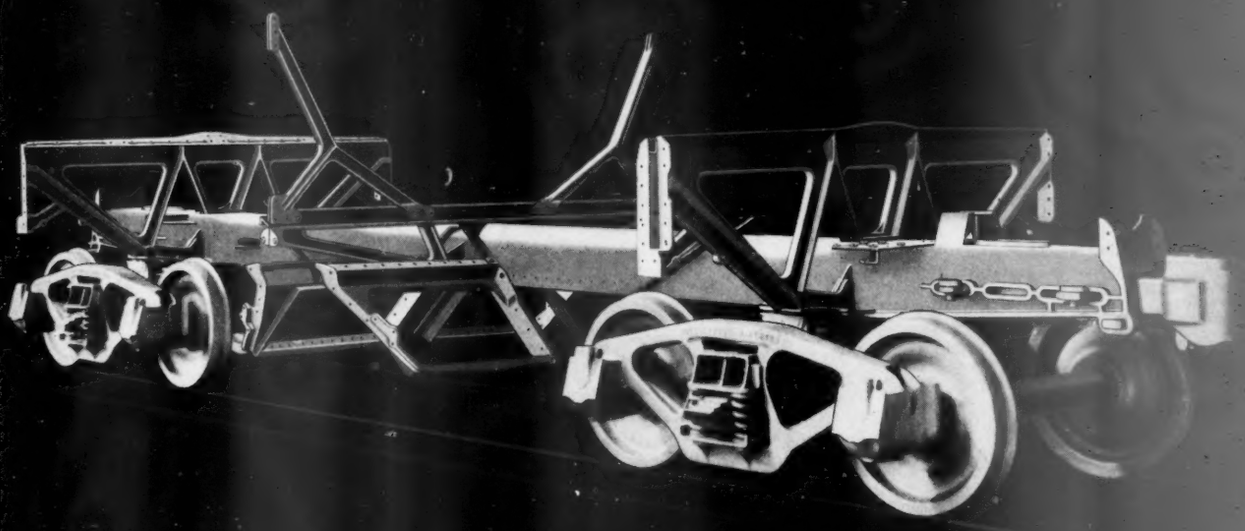

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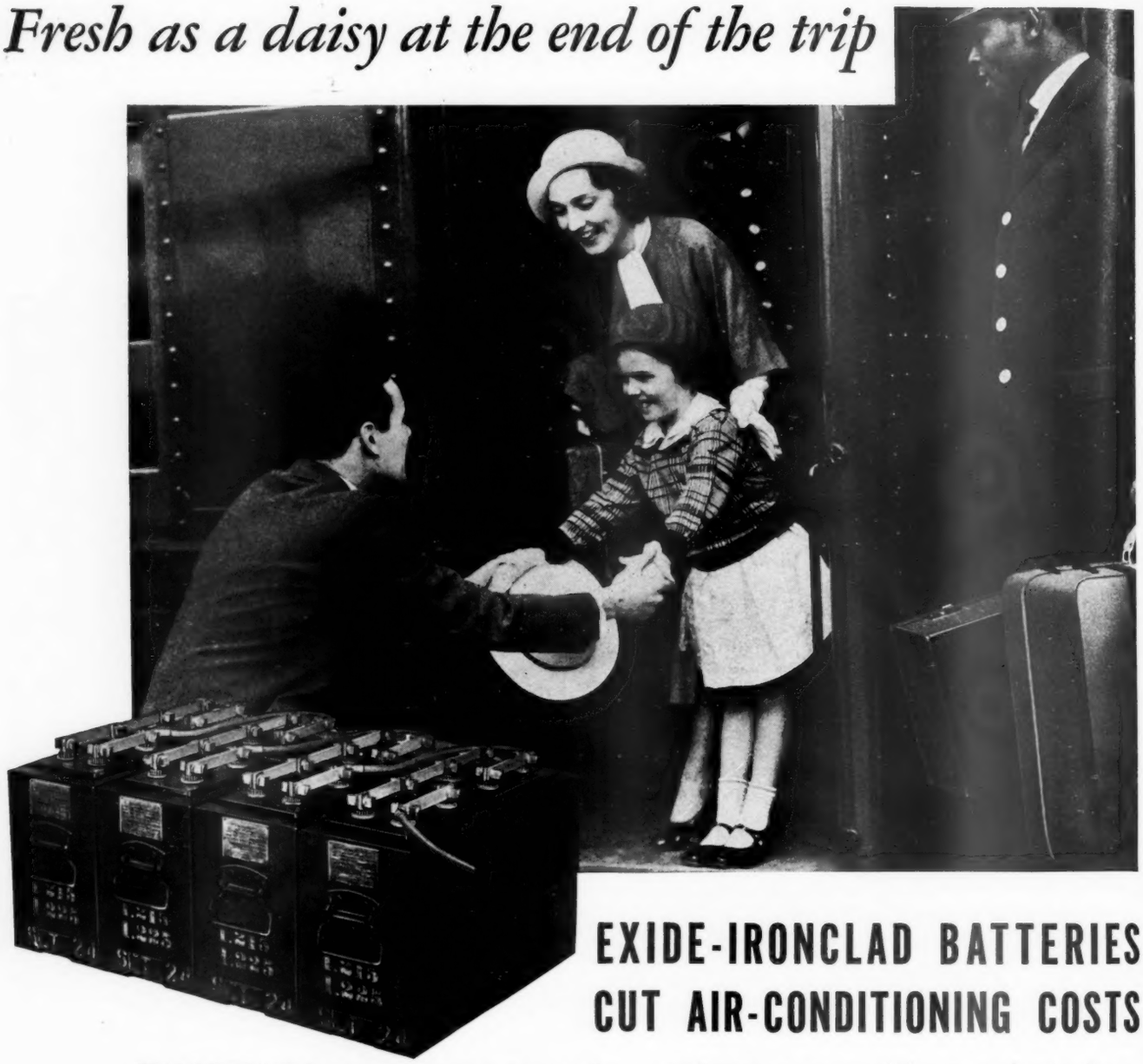

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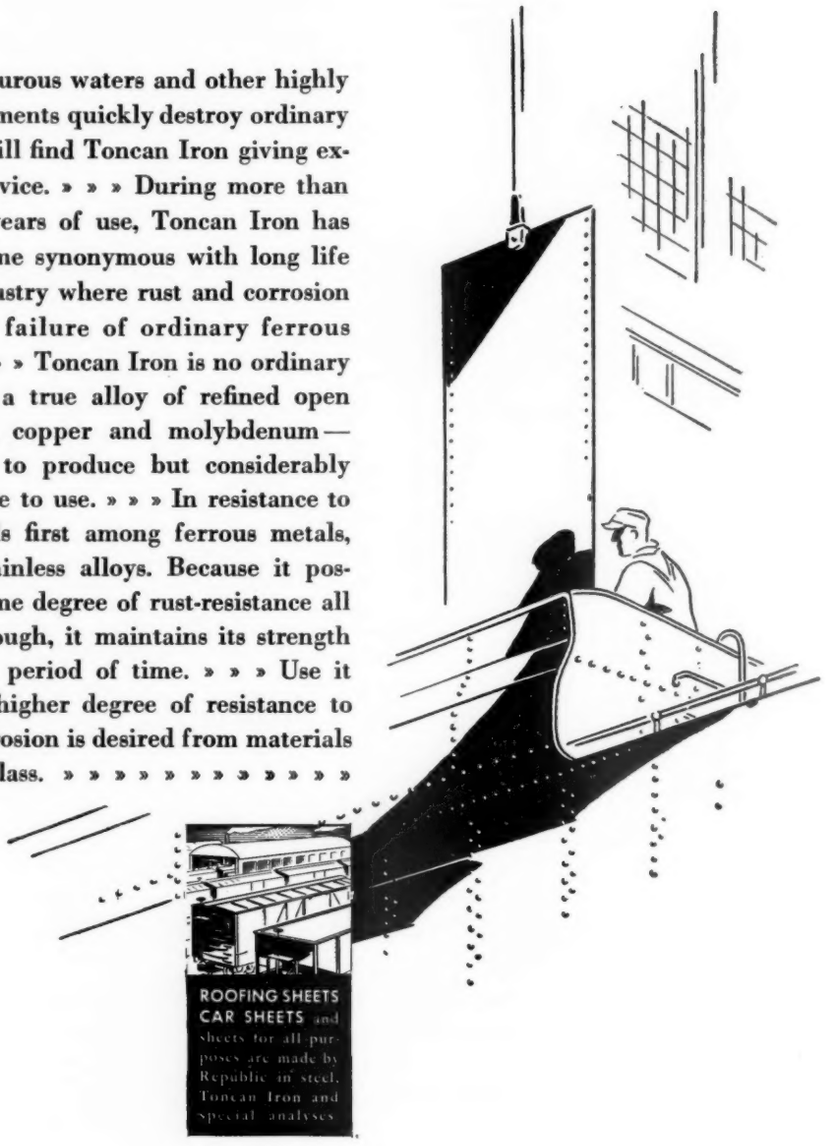

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RAILWAY AGE

Significance of Railroad Pension Decision

The decision of the Supreme Court of the United States holding unconstitutional the railroad pension act may prove to be one of the most important in the court's history, to the railroads in particular, and to the nation in general.

The saving in pension costs that it will cause may be much less important to the railways than the limits it apparently sets to the constitutional power of Congress to regulate and burden them in many ways. The court invalidated the act because it was not regulation as meant by the constitutional provision authorizing Congress to regulate interstate and foreign commerce, and because it violated the constitutional prohibition of the taking of property without due process of law. The court plainly had to thus decide unless it was to disregard most of the precedents established by its own previous decisions in cases involving similar issues.

Bearing on Other Railway Legislation

What does the decision indicate regarding the validity of much legislation now in effect or proposed? The Emergency Transportation Act of 1933 prohibits the railways from reducing employment below the level of May, 1933, and imposes other restrictions upon their freedom to make economies affecting wages and employment. Almost every important reason given by the court for invalidating the pension act seems equally to indicate the invalidity of the labor provisions of the Emergency Transportation Act. And the same reasoning would lead to the conclusion that proposed legislation to establish a 30-hour working week on the railways and to limit the length of, and increase the number of employees on trains, was not properly regulation of interstate commerce, was confiscatory, and was therefore unconstitutional.

The question is not what may be in the interest of any particular class. It is not even what Congress may believe, or, for political reasons, may pretend to believe, is in the public interest. The Constitution, as interpreted by the Supreme Court until it is changed, determines what Congress may or may not do, whether actually, or only ostensibly, in the public interest; and the decision in the pension case shows conclusively that the court still refuses, as it always has refused, to accept the view that, even as regards the railroads, Congress may make valid any class or confiscatory legislation that it may please to declare is a regulation of interstate commerce.

Emergency Transportation Act—30-Hour Week

In what sense, under the court's decision, can it be claimed that the labor provisions of the Emergency Transportation Act are a regulation of interstate commerce? The purpose of regulation as respects operation must be, as we understand the decision, to promote the public interest by promoting efficiency, economy and safety. It does not in any way promote efficiency, economy or safety arbitrarily to fix a minimum number of persons that the railways must employ, or to require that employees who lose their positions, or have them changed because of the adoption of measures of economy, shall continue to be paid all, or even a part, of what they were paid before. Such regulation by the Emergency Transportation Act is obviously regulation to hinder efficiency and economy, and therefore subject to the court's condemnation as taking property without due process of law.

Likewise, the proposed legislation for a 30-hour railway working week for 40 hours' pay is obviously intended, not to increase the efficiency, economy or safety of operation, but to force the railways, first, to pay present employees higher wages, and, second, to employ more persons, which would greatly increase the cost of operation. This, under the court's decision, would not be regulation of commerce, and therefore would be taking of property without due process.

Train Lengths and "Full Crews"

The claim is made that the proposed legislation to limit the length of trains and to require the employment of more men on them would increase the safety

of operation. Convincing data and arguments can be presented to show that it would have the opposite effect. It would increase the number of trains that would have to be operated to handle a given amount of traffic, and thereby increase the number that might collide with one another, or become derailed, or collide with highway vehicles, or cause accidents of other kinds.

The average number of cars per freight train increased from 36.6 in 1920 to a maximum of 48.9 in 1930, or 34 per cent. During the same period the number of trainmen killed declined from one out of each 288 employed to one out of each 645 employed, or relatively 55 per cent. There was relatively a greater decline in the number injured. The figures demonstrate that increase in the length of trains has been accompanied by a decline in the hazards of employment in train service, and that, therefore, from the standpoint of safety, there can be no justification for legislation ostensibly to limit but actually to reduce the length of trains, or to increase the number of men employed upon them. Such legislation would, however, increase the cost of operation, and, would therefore, under the court's decision in the pension case, be an unconstitutional attempt to take property without due process of law.

Implications Concerning Other Industries

Being engaged in interstate commerce and in the rendering of a public service, the railroads are constitutionally subject to more regulation by Congress than most industries. Obviously, therefore, the court's decision has much farther-reaching implications regarding federal regulation of other industries than regarding regulation of railroads. As the provisions of the railroad pension act were not regulation of interstate commerce and were confiscatory, it seems necessarily to follow that much of the New Deal legislation applicable to other industries adopted or proposed, such as N. I. R. A. and pending security measures, and much legislation advocated by organized labor, such as the Wagner collective bargaining bill and that to establish a 30-hour week in all industry, will or would be held unconstitutional.

The Constitution of the United States was originally adopted principally to prevent either state or national legislation that would hamper and burden commerce, or that would discourage or destroy thrift, initiative and enterprise by transferring the fruits of their savings and labors from those who showed these qualities to those who did not show them. It is the supreme law of the land. It can be changed, but only by the people themselves, and by the process that it provides for changing it, and not by acts of Congress, whether well-intended or passed merely to win votes.

Effect on "Share-the-Wealth" Movement

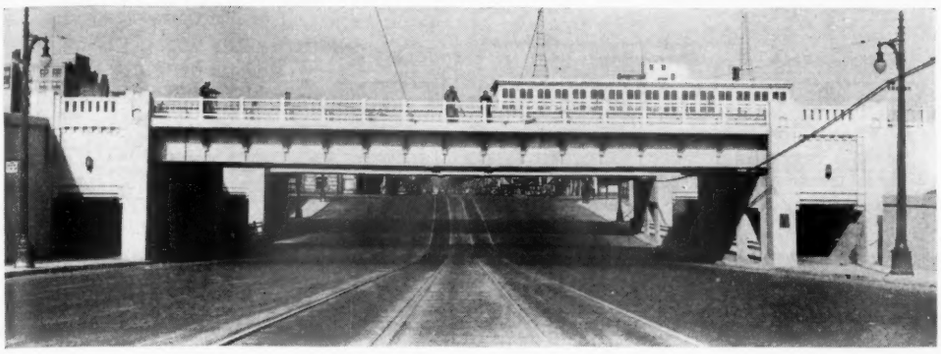
The decision of the Supreme Court in the railroad pension case is the best assurance of ultimate, or even early, recovery that has been given since the depression began. It assures the railroads once more that they cannot be regulated in entire disregard of the fact that they are privately-owned and managed. It assures private business in general that the power and benevolence of Congress in regulating and taxing are still limited, not by its changing ideas of economic, social or political values, but by the same constitutional provisions for the protection of property and human rights by which they always have been limited. The "share-the-wealth" revolution has been slowed down, and can make little further progress without amendments of the Constitution, unless it can be expedited by excessive direct use of the power of taxation ostensibly for ordinary purposes of government.

Steam, Speed and Color

There was a time when trains and locomotives possessed, through the medium of color, an individuality which romanticized them and endeared the legend of steam to an entire people. Red paint and gold leaf were as much a part of the external economy of the graceful eight-wheelers that made American railway history in the three decades after the Civil War as were steam boxes, crossheads and main rods. Engines had names, colored smokestacks and personality, and a fireman's spare time was quite consumed in the business of polishing the brass of handrails, flag sockets, bells and whistles. The era of balloon stacks and pre-vestibule flyers was one of flame and color. Waving at trains became an American custom because they went by in a blaze of glory and flashing eccentric cranks. Mahogany cabs were not unusual, and the White Train, that made the Boston-New York run in the '90s in six hours flat, was a miracle of cream paint and gold leaf. When No. 999 of the Empire State Express, with engineer Hogan at the throttle, made 112.5 miles an hour in '93 her connecting rods gleamed like mirrors; there was red trim to the spokes of her seven-foot driving wheels, and the gilt letters on her tender were forty inches tall in Spencerian script.

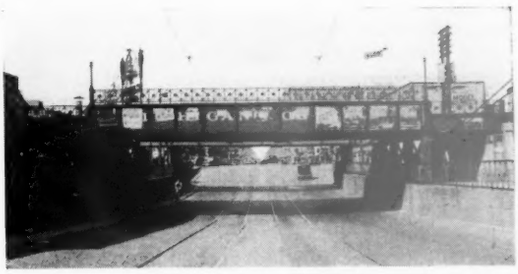
Today the new streamline trains, in a more subdued but still handsome manner, are bringing back the tradition of color in railroading. Wide bands of brilliant blue bisect the aluminum-finished articulated cars of the New Haven's streamline clipper, Comet, and its roof is a study of bright-gray enamel. The new electric locomotives of the Pennsylvania system are still more or less modest, with their discreet red and gold brushwork, but the Pullman-built Union Pacific's streamline flyer makes its run like a gleaming streak across the flat lands of the West. Color is once more appearing in rail transportation, and some of the ancient glory of the steel highway may be recaptured with it.

From the New York Herald Tribune



At the Left — How Woodward Avenue Crosses Under the Michigan Central and Grand Trunk

Below—The Old Subway Structure



Underpass at Detroit Rebuilt to Accommodate Wider Street

Use federal funds to reconstruct Woodward Avenue undercrossing of Michigan Central and Grand Trunk

AN object lesson in the influence of the growing volume of highway traffic on the demand for increased expenditures for grade separation is afforded by the fact that one of the earlier projects carried out with funds supplied by the federal government involved the replacement of an old grade separation structure with a new one designed to provide a more commodious street thoroughfare under railway tracks at a cost of $400,000. The project in point concerns the structure that carries the tracks of the Michigan Central and the Grand Trunk Western over Woodward avenue (U. S. 10) in Detroit, Mich., which was entirely rebuilt to accommodate a widening of that busy artery of traffic from 74 ft. (at the crossing) to 120 ft.

Long Span Over Roadway

It is of interest to observe also that the structural requirements imposed in providing a clear span of 90 ft. over the central roadway in place of the old central span of 50 ft., made it necessary to raise the tracks 2 ft. 6 in. and depress the street an additional 1 ft. 8 in., although no change was made in the clear headroom of 14 ft. provided in the old underpass. This pronounced increase in the nominal railway floor depth was necessary in spite of the rather unusual expedient of avoiding double-strength girders of greater depth or unwieldy design by building the superstructure for each track as an independent single-track structure. In addition to decreasing the amount of steel required, this expedient, which introduced two girders between tracks instead of one, made it necessary to spread the tracks from 15 ft. centers to 16 ft. 9 in.

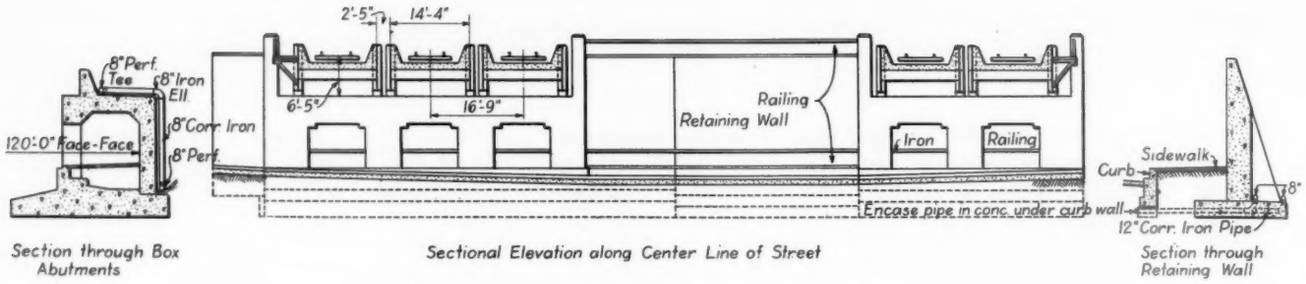
Special consideration was given in the design to insure effective architectural composition. However, it is especially noteworthy that this did not give rise to the masking of the outside girders by means of concrete, sheet metal, or the like. The girders are exposed, and the resulting effect is more genuine and probably no less pleasing than could have been obtained by any subterfuge.

Woodward avenue, which cuts through the axis of the city's business center and functions as the chief north and south route of street traffic, is crossed about two miles from the Detroit river by a group of railway tracks that embrace the Michigan Central's line to Bay City and Mackinaw City, and the West Detroit line of the Grand Trunk. Both lines provide access to important industrial areas of Detroit. The volume of traffic on both the street and the railway lines was such that this crossing was selected for one of the earliest grade separation projects in the city, completed in 1901, by elevating the tracks and lowering the street.

Two Separate Structures

Because the tracks of the two railways are some distance apart, two separate structures were built; one accommodating three tracks for the Michigan Central and another carrying one track for the Grand Trunk Western, the latter having been amplified to accommodate a second track in 1914. Each structure had a length of 74 ft. between the faces of abutments and was divided into a central span affording a clear opening over the roadway 50 ft. wide between curb lines, and flanking spans over the sidewalks. The superstructure consisted of through plate girder spans supported at the curb line by steel bents carried on concrete piers or curb walls. These walls were carried up to the level of the sidewalks, which were about five feet higher than the roadway.

The replacement of this structure was occasioned by a project for widening Woodward avenue to 120 ft., namely, 33 ft. on the west side and 13 ft. on the east side. Studies of the longer structure suggested both



General Features of the New Woodward Avenue Subway

four-span and two-span designs, but objections by municipal and state engineers to the presence of columns in the center of the street resulted in the adoption of a plan embodying supports at the curb-line and entailing a clear span over a roadway 90 ft. wide from curb to curb. The sidewalks were accommodated inside of reinforced concrete box abutments but the roadway span required plate girders 95 ft. 6 in. long, center to center of end bearings.

A Novel Expedient

As in other structures carrying tracks over a street, the floor depth was an important factor in the design, since this dimension plus the clear headroom determined the amount by which the grades must be separated. But with a span of 95 ft. 6 in., which necessarily dictated a through design, the actual details of the floor construction could be the governing factor only if it were possible to make the girders shallow enough or to spread them sufficiently to keep the inside edges of the top flanges from fouling the clearance diagram. These conditions could not be met in this case, even by spreading the tracks from the old spacing of 15 ft. to the maximum of 16 ft. 9 in. that was permissible in this case. As a result, the design adopted was a compromise of the conflicting considerations of a minimum separation of grades, satisfactory structural design and economy in the use of metal.

A View of the Concrete Plant Near One of the Abutments

Independent spans consisting of two single-strength girders spaced 14 ft. 4 in. center to center were provided for each track, the use of single strength girders permitting a practical design with a depth of 8 ft. ½ in. back to back of flange angles. With the 20-in. cover plates used, it was possible to depress the floor between the girders to a depth such that the base of rail was about 2 ft. 3 in. below the tops of the girders without fouling the clearance diagram. This arrangement resulted in placing the base of rail 6 ft. 4 in. above the bottom of the girders or a nominal floor depth 3 ft. 9 in. in excess of that in the old bridges. The girders of adjacent spans are separated by a clear space of 9 in., or enough to permit the inspection and painting of the outsides of the adjacent girders. Sidewalks are bracketed on the outside of the south girder of the Michigan Central structure and the north girder of the Grand Trunk bridge.

The track floors consist of 24-in. 94-lb. CB-section beams, placed transversely and framed into the webs of the girders at a spacing of 3 ft. These are covered with a cast-in-place reinforced concrete slab having a minimum thickness of 7¼ in., over which a mastic covered waterproofing was applied before introducing the ballast.

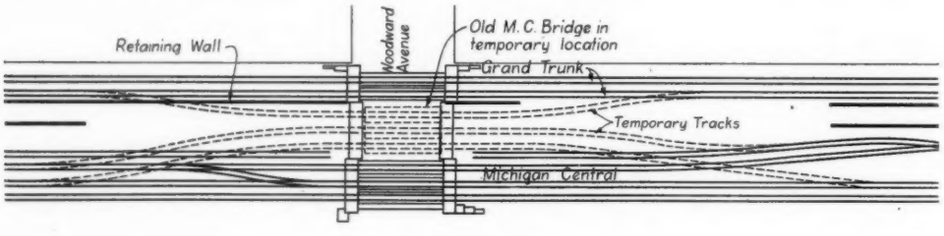
Box-Type Abutment

Contrary to expectations, excavation at the bridge site uncovered excellent foundation material, a dry gray-blue clay that was deemed capable of supporting natural foundations with a maximum applied bearing pressure of 5,500 lb. per square foot. Studies of a substructure designed to meet this condition led to the adoption of box-type abutments that provide passageways 10½ ft. wide for the sidewalks between the embankment walls and the curb piers that support the girder spans. With the toe extensions, these abutments have footings 28 ft. 6 in. wide. To increase the day-lighting of the walkways, the curb piers are pierced by openings 10 ft. 9 in. wide directly under each track.

In the space between the bridges of the two railroads, which are separated a distance of about 49 ft., the embankment is supported by retaining walls abutting on the street lines. However, footings of the same design as those for the abutments have been provided under the south portions of these walls for a sufficient width to accommodate an extension of the Michigan Central structure to provide for an additional track.

Attractive Appearance

As mentioned previously, considerable attention was given to esthetic treatment, and an effective result was

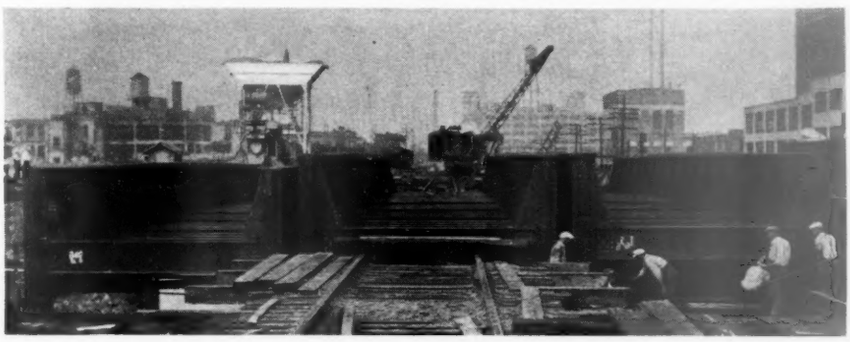


Sketch Map of the Grade Separation Site, Showing Temporary By-Pass

obtained without resort to means involving unusual expense. The ends of the abutments are emphasized by two massive pilasters that extend up to the level of ornamental iron railings placed along the edges of the sidewalks cantilevered from the roadway girders. Attractive panels were introduced over the portals of the sidewalk passages, the headroom of which was restricted to 8 ft. 9 in., for the purpose of giving greater emphasis to the central roadway. The ornamental railing was carried across the tops of the retaining walls between the two structures and was also introduced along the curb line at the street level. Parts of the steel seen from the street were given a final coat of aluminum paint.

Arrangements for Traffic During Construction

As the replacement of the bridges under traffic would have involved many complications, it was decided to take advantage of the clear space between the two railroads for the construction of a three-track temporary bridge to handle the traffic of both lines. And since it was required to provide for the continued use of the street during construction, the most practical plan was to shift the existing Michigan Central structure into position for such use, with pile trestle extensions on each end to permit the widening of the street, retaining wall construction, etc. The change in the bridge location was made with only 1-hr. 45-min. interruption of traffic, only 26 min. being required for the actual movement. However, elaborate falsework was required in making this change because of the obstructions offered by the existing masonry and the necessity for cutting away part of the old steel work to clear the location of the new masonry.



Three of the Girder Spans During Erection

Concrete Work

The concrete for the bridge was mixed in two plants, one on each side of the street, and spouted into dump buckets mounted on cars that ran on two-foot gage tracks parallel with the street behind the abutments and from which the buckets were hoisted by cranes for dumping into the forms. All concrete was batched by weight according to the water-cement ratio to give about a two-inch slump. In addition to that for abutments and the bridge floors, the concrete work included the construction of a retaining wall for some distance along the north side of the Grand Trunk tracks, and the capping of the wall to the south of these tracks to provide for the raise in grade. Provision for drainage included a well-designed system of pipe lines behind the abutments and the use of buck-shot gravel, a by-product of a local sand and gravel operation, for the back filling.

The diversion of traffic to the by-pass line cleared the site of actual construction effectively except for the building of the retaining walls and sidewalks under the temporary bridge. However, the fact that the operated tracks, which cut through the center of the construction side, handled an average of 60 train and switching movements during the daily working period called for the exercise of constant vigilance to guard against accidents. Erection of the superstructure introduced no special problems, and involved a minimum use of the operated tracks.

The new grade separation was constructed under the supervision of the Michigan State Highway Department, Murray D. VanWagoner, commissioner, with the co-operation of the two railroads. The structure was designed by the engineers of the two roads, the Michigan Central providing the plans for the superstructure and the Grand Trunk Western the substructure. The specifications of the A.R.E.A. were used for the design and fabrication of the steel superstructure, based upon Coopers E 70 loading. The specifications of the state highway department were used for concrete design, materials, and workmanship. P. D. Fitzpatrick, chief engineer, F. P. Sisson, principal assistant engineer, and A. N. Laird, bridge engineer, represented the Grand Trunk Western. George H. Harris, chief engineer, E. R. Lewis, office engineer, and J. E. Bebb, bridge engineer, represented the Michigan Central. The highway department was represented by L. W. Millard, bridge engineer, J. H. Cissel, engineer of bridge design, and J. H. Flynn, engineer of construction, and assisted the railroads' engineers in matters of design and construction.

The major part of the construction work was done under a contract let by the state highway department to the D. W. Thurston Company (now known as the W. J. Storen Company), Detroit. Each railroad arranged for or performed with its own forces the temporary bridge work, track work, grading, ballasting, signal, telegraph and telephone work. The steel superstructure was fabricated by the American Bridge Company and erected by the D. W. Thurston Company. The whole cost of the project, whether performed by railroad forces or by contract, was borne by the federal government under the provisions of Title II of the National Industrial Recovery Act.

THE ARGENTINE STATE RAILWAYS has recently ordered eighteen 25-metric tons Diesel rail motor cars, according to reports made public by the U. S. Commerce Department. By the terms of the purchase contract, these coaches must be delivered by April 1, 1936. Although several Diesel cars are already being used in Argentina by private railway companies, the Argentine State Railways will be the first to employ such types of cars over other than so-called short hauls, the report states. They will replace steam locomotives now operating on the runs between San Juan and Cordoba, a distance of 600 kilometers, and between Cordoba, La Rioja and Catamarca, a distance of 620 kilometers.

Illinois Central Changes Stores Practices

Under the Crane on the Illinois Central

Purchasing facilitated and handling costs reduced by improving methods of ordering and distributing material

By W. S. Morehead

General Storekeeper, Illinois Central System, Chicago

DURING the past year, the Illinois Central has made several important changes in supply-department practices, some of which followed rearrangements made by the mechanical department in the assignment of work at different shops, while others were made with a view to a more economical and efficient material supply operation.

The office of general storekeeper was moved from the Burnside shops in the outskirts of Chicago to the general offices down town, and the office force consolidated with that of the purchasing department. This eliminated much duplication of work and placed the stock book bureau, or the cataloging department, in close touch with the purchasing department and in a position to work more closely with standardization and simplification committees. Under the present arrangement, the general storekeeper is also placed in a position to keep in closer touch with the purchasing agent and the heads of other departments.

The store at Burnside was discontinued as a general store for the system and two district stores were established, one at Burnside and another at Paducah, Ky. The change was largely made because the major shops are now located at Paducah, Ky., Centralia, Ill., Memphis, Tenn., and McComb, Miss., and because a large portion of the purchases are made from manufacturers in the central and southern regions of the United States.

The district store at Burnside is now a distributing store for all material required in less than carload lots at points on the Northern and Western lines, while the district store at Paducah is now a distributing store for all material required in less than carload lots at points on the Southern lines. Material required at any point in quantities equal to a minimum carload is shipped direct to those points by manufacturers, both to expedite delivery and to save handling costs. There are, however, some exceptions to this division of territory assigned to the two district or distributing stores. Certain steel and malleable castings, which are purchased only in Chicago market, are distributed for the entire railroad through the Burnside district store, while materials manufactured only in the company's shops at Paducah are distributed over the entire railroad through the Paducah district store. This distribution gives the purchasing agent a wider market range without incurring the possibility of an extra haul of the material. The arrangement has reduced the general overhead expense, has placed the responsibility for ordering and distributing material closer to the points to be served, and has established a closer personal contact between the forces of the supply department and the forces of the departments actually using the material.

To assist the purchasing department in taking advantage of the lower prices offered for purchases made in quantities, arrangements have been made to order certain classes of steadily-moving stocks on the basis of the requirements for 60 days, instead of 30 days as was done in the past, and requisitions for all the material requirements of one class, from all stores, now reach the purchasing agent on the same date. In addition, where a sufficient saving can be made in the purchase price by placing orders with one firm for shipment to

one point, all orders are consolidated for shipment to one of the distributing stores for redistribution to the points ordering.

Three revised requisition forms have been put into use, consisting of a combination "Purchasing Order and Storekeeper's Requisition" for the ordering and purchase of stock materials, a "Department Requisition" for the use of departments ordering other than stock item materials and a "Transfer Requisition" form for use in transferring materials between stores and departments.

The combination "Purchase Order and Storekeeper's Requisition" forms come in pads in which the blank forms are already arranged serially in sets of eight sheets, some sheets in each set serving, as indicated by their markings, as the purchase order portion of the form and others as the requisition portion of the form. The sheets measure 7½ in. by 9½ in., which is the present standard size for letter paper. The first sheet is used as the purchasing agent's order on the shipper, the second copy as the purchasing agent's office record and the third and fourth copies are extra copies for use as information to those interested in the order. The fifth copy is the storekeeper's requisition on the purchasing agent and is provided with spaces for necessary signatures. The sixth copy is the storekeeper's office record, and the seventh and eighth copies are extra copies for use as information to those who may be interested in the requisition.

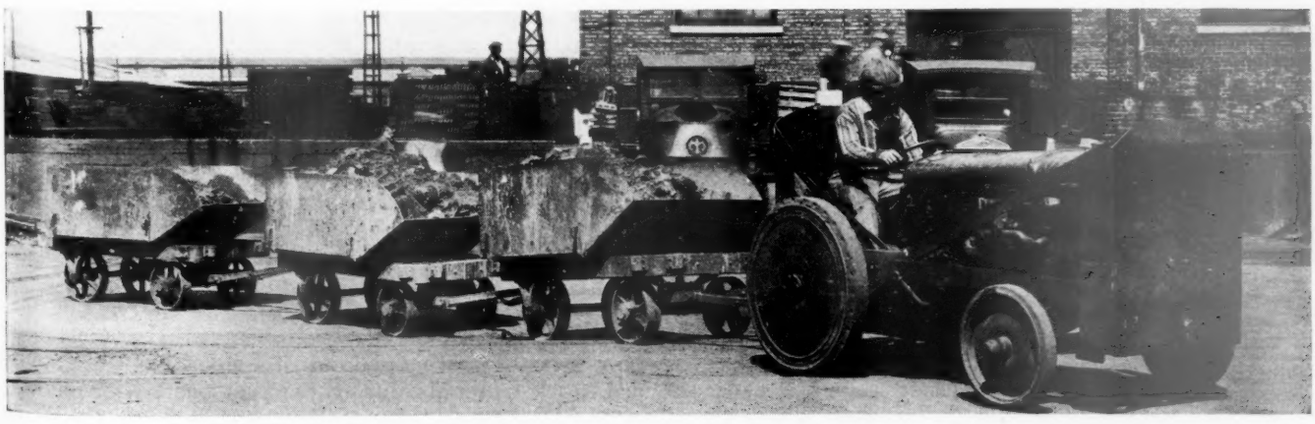
Storekeepers, in preparing orders on this combination "Purchase Order and Requisition" form, fill the forms completely, including the name of the firm with which the order is to be placed, when ordering materials in all cases where the purchase is covered by contract. In the absence of a contract, the storekeeper fills in the order completely with the exception of the firm name, terms of purchase, etc. When contracts are made to cover the purchase of requirements of certain materials, storekeepers who have stock books are notified, and the stock books are properly marked to show the information necessary for preparing future orders.

In preparing these combination "Purchase Orders and Requisitions," the storekeepers order only one class of material on a requisition and number the requisitions from that store consecutively, beginning with numbers in a series assigned to the store at the beginning of the year. Each number is prefixed by the class number in which the material ordered is carried.

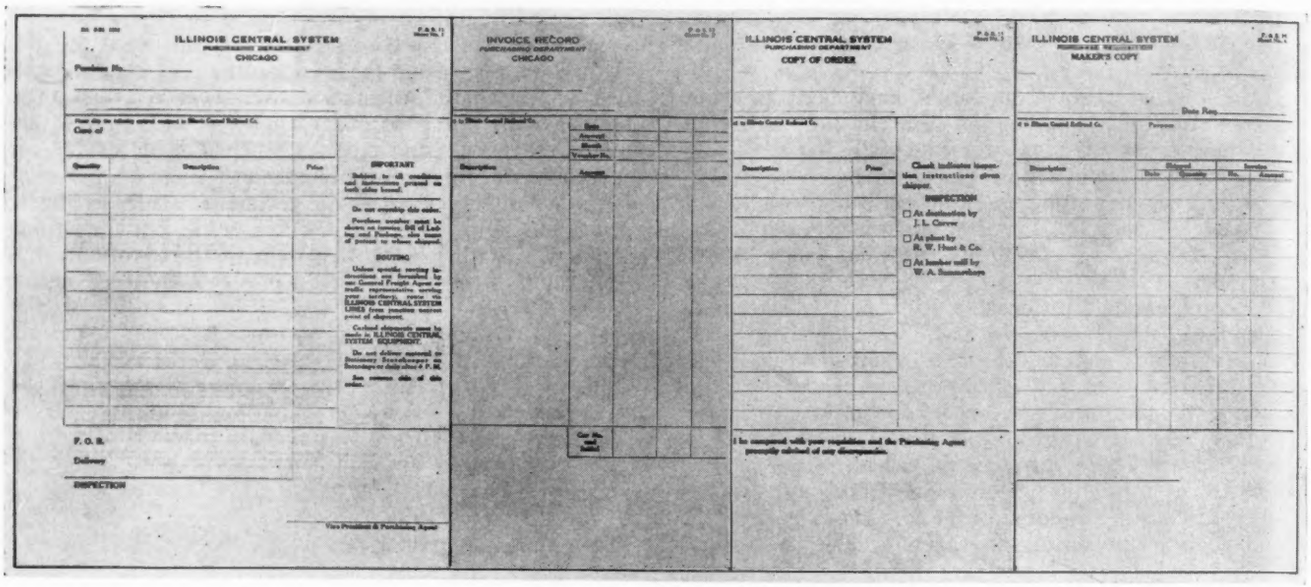
The orders and requisitions prepared on this form are forwarded by the originating storekeeper to the general storekeeper where they are checked against the master stock book to determine if it is possible to secure any of the material from some other part of the railroad and avoid purchasing it. Data showing the quantity of each item on hand, on order and consumed are not required in preparing the new forms. If the material must be purchased, the signature sheet of this form, together with purchase order copies 1, 2, 3 and 4, are sent to the purchasing agent. Since it is necessary for the purchasing agent to rewrite less than 15 per cent of these orders because of revisions made in them, there is not only a saving in office work, but the orders are handled with greater dispatch, which eventually has a favorable effect on the days' supply of material necessary to carry in stock. Where large quantities of material are required and it appears reasonably certain to the storekeepers that the purchasing department will divide the order between two or more firms, only the requisition portion of this combination "Purchase Order and Requisition" form is used. In general, purchase orders, prepared as described, reach the purchasing department within an hour after they are received by the general storekeeper.

The "Department Requisition" form is used for ordering special items not considered stock material. This form is pink in color and comes in pads with the blanks arranged in sets of four sheets, 7½ in. by 9½ in. The original is the signature sheet, the second sheet is the maker's office record and the third copy is the storekeeper's record of the material ordered, while the fourth copy is an extra copy for use as information to those who may be interested in the requisition. This form of requisition is not used for ordering stock items.

Motor Cycles Are Popular for Quick Delivery Service

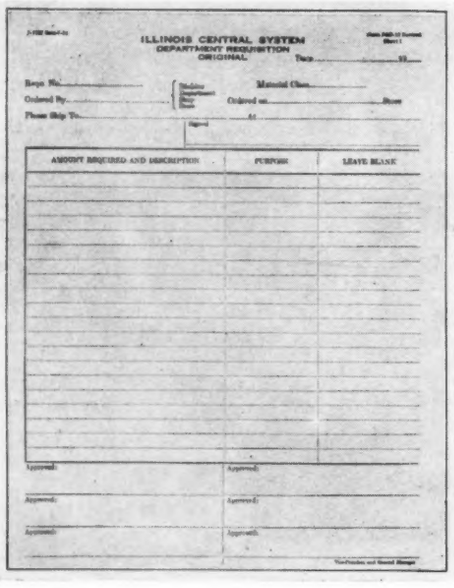


Motorized Material-Handling Equipment Is Used Extensively Around the Illinois Central Stores



New Forms Used for Purchasing Material—From Left to Right—Order on Shipper, Copy of Order for Use As An Invoice Record, Copy of Order for Inspection Department, and Original Requisition, All Forms Being Prepared at One Writing

The officer originating an order on this form sends the original and one copy to the division storekeeper, who checks the requisition against the lists of special materials on hand, holds one copy for his record, initials the original and forwards it to the proper operating officer for approval. When the requisition has been approved by all the department officers designated, it is then sent to the general storekeeper who checks it against all lists of special material on the railroad. If the order cannot be filled from materials on hand, the general storekeeper gives the requisition an appropriate requisition-order number, approves it and turns it over to the purchasing agent. The purchasing agent, in placing the order, sends a copy of the order to the storekeeper in whose territory the material is to be shipped and the storekeeper, upon receipt of this copy, matches it with the copy of the requisition which he retained when the requisition passed through his office. It will be noticed that the maker's original requisition is not rewritten until an order on the shipper is made by the purchasing agent, and the use of the colored form safeguards against ordering material of a special nature without giving approving officers full opportunity of knowing what is being ordered.



New Form Used by Departments for Ordering Special Materials

The "Transfer Requisition" form is used for ordering stock materials for transfer between stores and departments. This is made up of six copies, the original, two invoice copies, a shipping notice, shipper's record and maker's copy. The use of this form saves a great deal of rewriting by the shipping store.

The Illinois Central has budgeted its purchases for many years. This budget is given out monthly by the vice-president in charge of the purchasing and supply department, and the amount of the budget is determined from the knowledge obtained of work that is to be performed during the ensuing months, while at the same time giving consideration to the amount of material already on hand. This allotment, when given to the general storekeeper, is apportioned by him to the various district and division stores, and each storekeeper, when preparing orders for materials to be purchased, not only checks his stock from the standpoint of the amount on hand and used, but also considers the value of material ordered with reference to the days' supply on hand in each class. All stock books and storage bins carry the unit price of material, so that the approximate value of the material being ordered can be determined and compared daily with the allotments.

No system of purchasing, ordering, distribution or storage of material is worthy of consideration that does not take into account handling costs. Beginning with the consolidation of purchasing and stores general office force, every effort toward a more economical material handling has been made. In addition to reducing the cost of handling material by improving the method of distribution, by providing suitable cranes, trucks and other labor-saving devices, consideration has also been given to the elimination of extra reports and the duplication of records. The effect of these efforts is favorably reflected by the reduced percentage which it has been necessary to add to the cost of material used during the year 1934 to clear the handling charges. There has also been a substantial reduction in the investment in standard stock materials during the past year, with an improved service to using departments, reflecting a large saving in carrying charges.

Improved Refrigerator Car Design Long Overdue

Refinements in present design or radically new types must provide better service at reduced cost

By Harvey B. Lindsay
President, Dry-Zero Corporation, Chicago

WITHIN the next few years it is certain there will develop changes in railroad refrigerated transport comparable to the advances now being made in handling passenger traffic. As with passenger equipment, the advance for some time will probably be along two divergent fronts. On one there will be efforts to refine equipment along traditional lines, while on the other there will be a movement toward new types of refrigerator cars differing distinctly from conventional design.

New designs will seek to achieve (1) greater refrigerating efficiency to eliminate a percentage of re-icing on long hauls and make possible faster operating schedules, (2) reduction of maintenance cost and greater durability, (3) lighter weight, and (4) reduction of initial cost.

The purpose of this article is to indicate fundamental changes in current design essential to any considerable improvement. In undertaking this discussion it is necessary to evaluate the physical forces to which refrigerator cars are subjected, to study the requirements necessary to meet these forces properly, and to see how well, or poorly, present designs fulfill the need. The weak points of existing car structures and of considerable new design must be analyzed in the light of physical laws and conditions of use. Such analysis is not criticism, but merely a correlation of facts bearing on use of refrigerator cars.

It may be said that some of the proposals here made are "too radical." In all industrial history that vague charge has been leveled against nearly every marked improvement over long established practice. I am interested neither in radicalism nor conservatism but in physical facts, and if a more intelligent application of these facts to practice obviously calls for a change from previous ideas and methods, then it is submitted as the part of wisdom to proceed carefully but actively toward such change.

In such vital phases of the subject as sturdiness and life of structure, we have accurate material data to apply, yet I make so bold as to suggest that there may be better ways of achieving strength in refrigerator car construction than by relying on weight and bulk to the extent we have in the past.

Let us by all means provide wide safety margins in structural strength, but there are so many variants that must be recognized in this problem that it has always seemed to me that the only certain way of arriving at the maximum strength per unit of weight in the superstructure is first to establish the bare minimum need by direct wrecking tests. It will probably be found that nearly all refrigerator car designs are far over the optimum of weight, should durability be attained by methods proposed in this article.

Thermal Requirements

In such a definite effort at improvement there is at once apparent the wisdom of first being sure that the type of structural design investigated is also the most desirable for the needs of refrigeration and insulation. That, with one or two notable exceptions, refrigerator car designs to date do not meet this apparently essential provision, may perhaps become evident from the following analysis.

There are two basic structure-classifications of refrigerator cars: (1) The internal frame (providing the structural strength) type, and (2) the shell type. But before analyzing these separately let us consider for a moment what it is we are now trying to do when we build a refrigerator car.

In simple language, we want a light and durable car that will meet economically the strains of use and that will reduce to an economic minimum the passage of heat from exterior to interior (and sometimes vice versa).

To evaluate properly some of the factors involved, a few simple facts should be stressed, for it is amazing how frequently they seem to be ignored.

a—Ordinary mild steel permits passage of heat about 1,400 times faster than the best insulation; wood (under use) about 5 to 6 times.

b—Increasing moisture content of insulants causes increasing heat passage. Generally speaking, the denser the absorbing material, the greater this effect, before saturation.

c—Even when newly built, most wall materials—except metal parts—contain enough moisture to affect overall heat passage.

d—While the interior is chilled, water vapor, under pressure, is inevitably entering the walls from the outside in spite of supposed "moisture seals," and entirely independently of any air entry or "infiltration."*

These facts focus attention on three items in car design which are far more important in relation to efficiency than is apparently generally believed, at least in practice. These items are heat leakage through metal, heat leakage through wood, and moisture in the walls through entry of water vapor from the atmosphere.

Heat Leakage and Moisture Entry

In most existing types of refrigerator cars, through-bolts and threshold plates account for as much as 27 B.t.u. heat entry per hour per degree. Bolts, etc., extending partially through the wall account for an additional 3 or 4 B.t.u. These two items represent about 20 per cent of the total heat entry into the average car, showing the importance of elimination of through metal.

In the case of the usual wood-frame cars, whether wood or steel sheathed, we have another condition that is not consistent with thermal efficiency or structural

* The great amount of work done at the Dry-Zero Laboratory in the last three years for a portion of the electric refrigerator industry, on the subject of moisture entry into insulating walls, has disclosed facts and developed protective methods fundamentally affecting insulation practice.

longevity. In the side and end walls (roughly 60 per cent of the heat absorbing surface of the car) from 24 to 28 per cent of the entire area supposedly well insulated is filled with wood framing and compressed insulating material. In most cases the latter, due to compression and moisture in those areas, is reduced to about the same thermal resistance as the wood. Hence, in effect, about a quarter of this entire area is through wood. This proportion of the area having at least four times the heat conductance of the insulated three-quarters, the effect on overall efficiency is obvious. Such defects must be overcome in new designs if they are to provide higher refrigerating efficiency and reduce icing requirements with consequent lowering of operating costs and speeding up of schedules.

There is another less obvious defect which not only reduces refrigerating efficiency but is reflected in maintenance and durability of equipment. This is the presence of moisture within the refrigerator wall. Moisture enters an insulated wall (under refrigeration on the inside) through the outer shell in the form of water vapor, a true gas. The entry of air is immaterial; indeed, through the same microscopic crevice we often have water vapor entering and air passing out in the opposite direction at the same time.

Water vapor will slowly but readily pass through material which is air-tight. As there is no insulating wall built which would hold a vacuum for any length of time, it is at once seen that we have no complete vapor seal in practice.

When a refrigerator car is in use there is a definite pressure on the water vapor in the outside atmosphere, forcing it into the cooler insulated wall and through the insulation toward the cold lining. Upon striking the latter, much of this vapor usually condenses as moisture. If the insulating material is the least absorptive, this moisture enters it and we soon have damp insulation. If the insulant is definitely not absorptive—"non-hygroscopic," as it is called—the moisture does not enter or wet it, but runs down the liner to the car bottom. However, if there are vents in the liner, the water vapor, instead of condensing, carries through to the interior of the car and deposits itself on the refrigerating element. This fact is the answer to the problem of moisture entry.

Venting Practiced in Advanced Refrigeration Fields

The practice of venting has been found most valuable in advanced fields of refrigeration practice, such as low-temperature truck bodies, ice-cream cabinets, frozen-food display counters, etc. It is important to note, however, that venting is impractical with any but non-hygroscopic insulants.

When we come to cases where the temperature of the liner of a refrigerated compartment is well below freezing, we have to be much more careful than when that temperature is above freezing. This is for the obvious reason that any moisture condensing on the liner as frost, if not eliminated gradually, builds as frost out through the insulation. To overcome this difficulty it becomes necessary not only to make the venting means (to the interior cold chamber) more rapid than the vapor leakage through the outside shell, but they must be far more rapid, as we are liable at any time to have to get rid of frost as it forms—a much slower process than evaporation.

From the above it is evident that prevention of moisture troubles depends primarily upon certain insulation characteristics. First, the insulation must be non-hygroscopic. Second, the insulation should be highly efficient. This will slow down vapor entry through outside microscopic crevices and the porosity of the shell, because the better the insulation the lower will be the temperature differential on either side of the outer shell. This lowers the actual vapor pressure at that important point and correspondingly retards vapor entry.

In the more advanced refrigerating trades it is possible practically to eliminate moisture troubles in the insulation, no matter how low the interior temperature. But it is only done by recognizing rather than disregarding the laws governing hygroscopic action. From this it is seen that, controlling as it does the venting provisions, structure and material design in connection with this subject of deterioration by moisture is of the utmost importance.

Light insulating material with low conductivity and non-hygroscopic in the specific sense referred to is in wide service, but, unless intelligent use is made of the laws of vapor travel, it is nearly as easy to get such an insulant saturated, where we are dealing with sub-freezing temperatures, as it is to get the other much more absorptive insulants wet. Indeed, in some cases where construction is contrary to the ideal, frost can build out through such light, highly efficient material more rapidly than through more solid materials, for obvious physical reasons.

The above exposition has no reference whatever to moisture trapped in an insulation space and sloshed back and forth through the insulation. Such a condition should obviously be prevented no matter what the quality of insulation used. Unfortunately, it has been a not uncommon occurrence.

For such structures as railroad cars or other containers to carry dry ice, a properly vented non-hygroscopic insulated wall is greatly superior to any other known type, and there is no reason why such a wall, properly constructed, should not last with full efficiency for the life of the structure.

It should be realized that so-called "moisture seals" are deceptively poor barriers to penetration by water vapor. Under standardized water-vapor penetration tests, using dry calcium chloride to provide a vapor pressure of 1.5 in. of mercury through the sheet, 30-30-30 Duplex Kraft paper shows a penetration of 4.1 grams per sq. ft., per 24 hours; 30-120-30 Duplex shows 2.5 grams, and even a ⅛-in. coat of asphalt, flowed hot, does not better this. The best such commercial seals—special asphalts rolled on good sulphate Kraft under controlled heat and pressure—show in the neighborhood of 1.5 grams per sq. ft., per 24 hours. As water vapor acts as a true gas under the ordinary laws of gases, it is simple to prognosticate the actual vapor entry through any commercial moisture seal in use, that has been so tested, if we know the outer and inner temperatures and the relative humidities involved when in use.

All of which means that the best vapor seal that can be supplied a refrigerator car exterior is sheet metal with tight joints. Here again we find something interesting. Of the three methods of joining the sheet edges—riveting, welding, and clamping under pressure with thin competent gasketing material between—the latter seems to give the best results, particularly after some degree of vibration and shock. Here, then, is another point where new design should improve on current practice, to increase durability, to lessen weight and to reduce maintenance costs resulting from damage created by moisture.

This subject of vapor entry, and subsequent condensation and moisture, deserves far more attention than it has received in the refrigerator-car field. It largely controls the life of both efficiency and materials. It is, of course, a far more serious matter in cars that are in fairly constant use than in those which are under re-

frigeration for short periods of time and then have months of other use in which to dry out again.

Shell vs. Frame

From the foregoing it would appear offhand that a refrigerator car composed of an outer metal shell and an entirely separate inner shell, both sufficiently reinforced to be self-supporting against maximum use-strains, and competent non-hygroscopic insulation between, should be the ideal type. Obviously this shell type, even as so far developed, is essentially superior to the types whose main structural value resides in a complete frame structure within the insulated wall. Indeed, in one outstanding example of steel shell-type cars, with non-hygroscopic insulation, nearly six years constant unremitting use has produced a record of previously unapproached efficient and satisfactory service. The basic reasons for such a result have already been analyzed here. There would seem to be no reasonable argument against the superiority of the metal shell type with respect to the requirements so far discussed.

But this brings us to a vital matter, one of paramount importance to the owning and operating lines, for it directly affects operating costs to a degree and maintenance costs particularly.

A locomotive is built to last in spite of its unusual exposure to strains and wear and tear. Yet, if a cylinder cracks, we do not have to cut the entire cylinder assembly off with an oxy-acetylene torch and weld on a new one —it would be needlessly expensive. If a wheel develops a flaw, we do not saw it off the axle—we replace it much more easily, quickly and cheaply. Suppose the steel sheet covering over the boiler logging is torn or damaged, do we cut it off with a torch and weld on a new sheet? Not by any means. It is much more easily and cheaply replaced than that. In other words, in design and building, intelligent provision is made for repair or damage—and even replacement with improved parts—with the greatest speed and ease and at the lowest maintenance cost.

Even in the sub-structure of a refrigerator car, it is not necessary to cut and weld and rivet when we have to replace a broken spring, a cracked drawbar or a defective brake-beam. Why, then, when we come to the superstructure of a metal-sheathed refrigerator car, reverse ourselves? Why build it so that anytime it is sidewiped, punctured, or suffers any of the minor external damages we know are common occurrences, must we cut or burn out the defective section and weld or rivet anew? Particularly when we know the wall is insulated and there is no efficient insulation that does not suffer by the process.

Which is the more advantageous course: To design refrigerator car bodies so strong (and heavy) that we hope they will be proof against superficial damage, though experience shows this vain, making no provision for economic maintenance when such damage occurs; or, make them lighter but amply strong, designing them so that they may be continuously kept in good order at minimum maintenance cost, and yield an efficient life of far longer span?

I have been studying this subject only since 1927, but sometimes there is an advantage in not being too close to a problem. In any event, observation, discussion and experience led consistently to one definite and inescapable conclusion. This was that for a light, strong, metal-sheathed refrigerator car, built for low maintenance and long life, the outer sheathing must be readily replaceable from the outside. This conclusion immediately raised the questions of water vapor entry, high fixed ratio of strength to weight, and some of the other insulated wall problems dealt with earlier in this article.

That it is entirely possible to design a light, strong steel refrigerator car, conforming satisfactorily with all of these sound requirements, but with any part of its external sheathing readily replaceable at a minimum cost of time and money, seems to be no longer merely academic discussion or the rambles of unpractical fancy. Such car structures are being developed.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended May 4 totaled 569,065 cars, an increase of 10,179 cars as compared with the week before but a reduction of 36,181 cars as compared with the corresponding week of last year. This was, however, an increase of 41,947 cars as compared with 1933. Most of the decrease under last year's figures was in coal loading. Grain and grain products showed a decrease as compared with the week before and all commodity classifications except forest products and ore showed decreases as compared with last year. The summary, as compiled by the Car Service Division of the Association of American Railroads, follows:

Revenue Freight Car Loading

For Week Ended Saturday, May 4

Districts	1935	1934	1933
Eastern	134,089	146,667	119,472
Allegheny	106,629	123,010	96,838
Pocahontas	35,410	43,758	33,480
Southern	84,844	87,748	82,113
Northwestern	79,578	74,018	67,299
Central Western	82,448	82,381	79,269
Southwestern	46,067	47,664	48,647
Total Western Districts	208,093	204,063	195,215
Total All Roads	569,065	605,246	527,118
Commodities			
Grain and Grain Products	25,608	27,091	39,549
Live Stock	14,094	16,752	17,934
Coal	84,330	112,133	77,658
Coke	5,143	6,853	3,508
Forest Products	27,378	24,998	19,419
Ore	19,189	9,851	5,768
Merchandise L.C.L.	161,844	166,485	164,633
Miscellaneous	231,479	241,083	198,649
May 4	569,065	605,246	527,118
April 27	558,886	609,704	538,809
April 20	610,905	591,705	496,512
April 13	587,685	579,981	498,182
April 6	545,627	559,070	492,061
Cumulative Total, 18 Weeks	10,382,849	10,510,874	8,801,977

The freight car surplus for the first half of April averaged 310,651 cars, an increase of 10,185 cars as compared with the number in the last half of March. The total included 177,547 box cars, 84,797 coal cars, 27,476 stock cars, and 8,028 refrigerator cars.

Car Loading in Canada

Car loadings in Canada for the week ended May 4 increased from 42,194 for the previous week to 43,196, but were 257 cars below last year's total, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total cars Rec'd from Connections
Total for Canada:		
May 4, 1935	43,196	21,780
April 27, 1935	42,194	22,758
April 20, 1935	40,283	24,038
May 5, 1934	43,453	25,414
Cumulative Totals for Canada:		
May 4, 1935	768,551	411,626
May 5, 1934	743,560	423,830
May 6, 1933	600,919	310,235

Track Capacity and Safety Increased by New Signaling on the Erie

Four-Aspect Signal on Descending Grade

Train speeds increased and delays reduced by replacing semaphores with color-light signals using two and three-block aspects

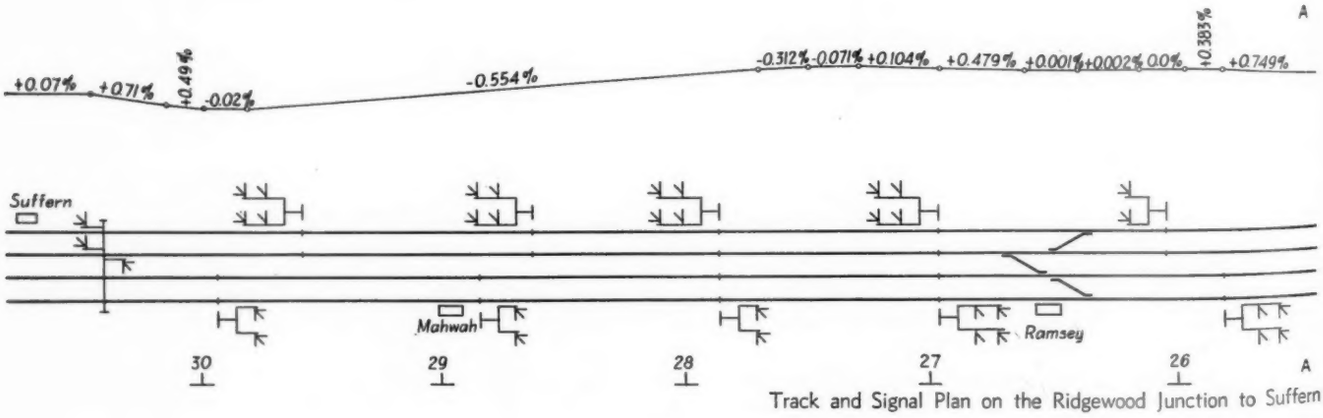
THE Erie has installed new searchlight type automatic block signals to replace two-arm lower-quadrant semaphores on 11 miles of four-track road between Ridgewood, N. J., and Suffern, this being a portion of the main-line division between Jersey City, N. J., and Port Jervis, N. Y.

From the east end of this territory, at Ridgewood Junction, a double-track main line, used primarily by passenger trains, extends 20 miles by way of Paterson to Jersey City. A second double-track line, known as the Bergen County line, used principally for freight traffic, branches off at Ridgewood Junction and extends by way of Fairlawn and Garfield, joining the other main line at Rutherford Junction. From Ridgewood Junction west to Suffern, 11 miles, the four-track line handles both the passenger and freight traffic, freight trains running on the two inner tracks and passenger trains on the two outside tracks, right-hand running being in effect. The daily traffic in this territory consists of 56 through passenger and 24 through freight trains, in addition to 38 suburban passenger trains.

Train Movements

The problem of getting all of the trains over this section of line without delays is complicated seriously by the fact that trains are "bunched," the preponderance of through as well as suburban trains being inbound to Jersey City in the morning and outbound in the evening. For example, between 6:30 a.m. and 8:00, the eastbound traffic includes six through passenger, 6 suburban and 2 time freight trains.

West from Ridgewood Junction, the grade ascends at a rate varying from 0.5 to 0.95 per cent for 6.5 miles, and then descends at a rate of about 0.55 per cent for



Track and Signal Plan on the Ridgewood Junction to Suffern

4.5 miles into Suffern. The old two-position lower-quadrant semaphores were spaced for blocks ranging from 2,500 ft. on ascending grade to 4,900 ft. on descending grade, the distant arm being on the same mast as the next signal in the approach. As train speeds and tonnages increased, this signaling arrangement was not entirely satisfactory.

New Signaling

The solution was to provide four-aspect, three-block signaling on the descending grade to permit higher train speeds and closer spacing of trains, with entire safety with reference to braking distances. In contrast, on the ascending grades proper braking distance and train spacing was provided by the use of three-aspect, two-block signaling.

Except in a few special instances, the signal locations were not moved, the block lengths remaining practically as they were. However, on the descending grades where the three-block signaling is used, the engineman can control the speed of his train to much better advantage since he gets an approach-restricting indication at the second signal in the approach to one indicating "stop," and an approach indication at the first signal in advance of the signal indication "stop." A train can thus be kept moving at the highest possible speed consistent with safety, thereby reducing delays and eliminating the necessity for heavy brake applications to make short stops. The new signaling also increases the track capacity because trains can now be spaced on the basis of braking distances on the ascending grade, and when they pass over the crest of the hill and accelerate while going down the grade, proper spacing is provided by the three block indications.

Signal Mounting and Aspects

New searchlight-type color-light signals were installed on the existing double-pole bracket masts formerly used for the semaphores. Each mast is located to the right of the two tracks governed, the signal on the field side being for the passenger track and the other signal being for the freight track, the two signals on the bracket being 7 ft. apart. Where the three-aspect, two-block signaling is used, one searchlight unit giving three aspects, red, yellow and green, is mounted on the left side of a short stub on the bracket, to bring the center of the lenses 25 ft. above the level of the rail. Where the four-aspect, three-block signaling is in effect, a pole 9 ft. 8 in. high is used on the bracket and the top signal unit is mounted at the right of the pole 6 ft. above the lower one, which is to the left of the pole. The aspects for the three-block territory comply with the standard code, being red over red, staggered for "stop and proceed," yellow over red for "approach," yellow over green for "approach medium," and green over red for "clear." This system of aspects not only allows adequate stopping distance with minimum spacing between following trains, but affords the engineman of a freight train adequate warning to control the speed of his train in conformance with the conditions ahead, so that he can keep his train moving with safety and yet eliminate unnecessary stops.

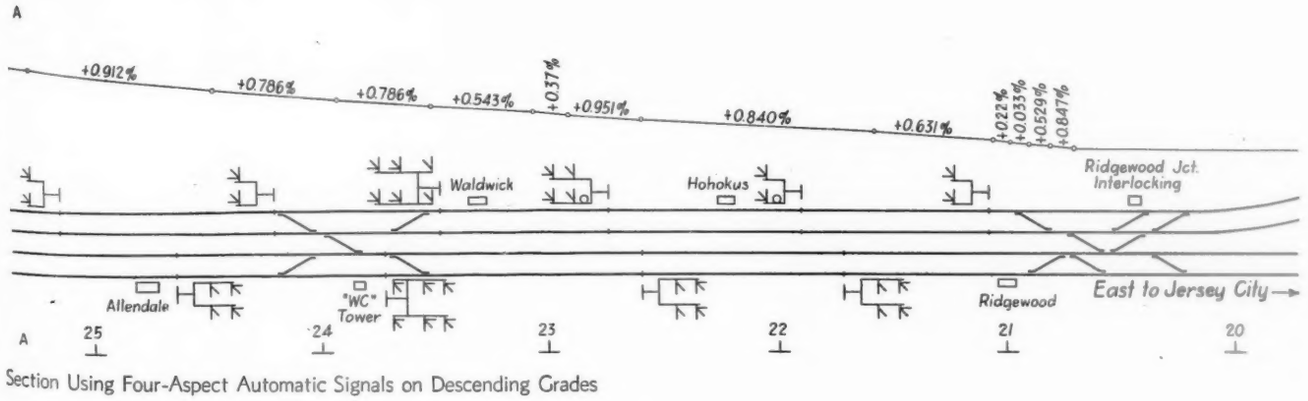
Check on Lamp Failures

Each signal is equipped with an 8-volt lamp which has two filaments, one rated at 13 watts and the other at 3.5 watts. The lamps are normally fed at 7.2 volts in order to lengthen the life. The signal lamps are on approach control, the lamp being lighted when a train is approaching, as well as during the time the block governed by the signal is occupied. The foreman of maintainers makes a check of the traffic to determine the average number of burning hours for each signal and establishes the date of replacement of the lamp to give about 2,000 burning hours. With this procedure, the lamps are, with rare exception, replaced before the main filament burns out, but even if the main filament does burn out the secondary filament gives an indication strong enough to permit an engineman to pick up the indication.

Another important feature of this installation is the fact that if both filaments in the top unit of a double-unit signal should burn out, a normally-energized relay, in series with this filament, will be released and, by means of circuits controlled by this relay, the lower unit will display red. Therefore, if the lamp burns out, there is no chance that the signal will display a less restrictive indication. For example, if the aspect is yellow over green, and the lamp in the upper unit burns out, this would leave a single green in the lower unit, except for the fact that the light-out relay operation would change the lower unit to the red aspect.

The design and construction of this signal and interlocking program were handled by the signal department forces of the Erie, the signals, relays, etc., being furnished by the Union Switch & Signal Company.

THE PENNSYLVANIA has presented to Edsel Ford the passenger transport airplane which for the past 4½ years has comprised the aeronautical exhibit in Pennsylvania station, New York. Known as "Old No. 1," it was the first passenger transport plane to cross the Rocky mountains and it will henceforth be on exhibition at the Ford Museum at Dearborn, Mich. It is a tri-motored Ford plane which was placed in service in September, 1927, between Los Angeles, Cal., and Santiago by the Maddux Air Line in California, afterwards consolidated with Transcontinental Air Transport, now Transcontinental & Western Air. The plane remained in regular service until September, 1930, since which time it has been in Pennsylvania station.



Section Using Four-Aspect Automatic Signals on Descending Grades

Railroad Safety Contest Awards

National Safety Council makes awards for 1934 performances in various classifications

THE National Safety Council, at a dinner at the Pennsylvania Hotel in New York City, on Monday evening, May 13, announced the results of the eighth annual railroad employees' national safety contest. J. E. Long, superintendent of safety of the Delaware & Hudson, and president of the National Safety Council, presided and made the awards. Mr. Long has the unique distinction of being the first railroad officer to serve two terms as president of the National Safety Council.

The contest covers only casualties to employees on duty, as reported to the Interstate Commerce Commission by Class I railroads. The contestants are classified in nine groups and a bronze plaque is awarded in each one of these groups to the road having the lowest total casualty rate, (killed plus injured per million man-hours) except that no contestant is eligible to win a group award for two consecutive years. This explains why in two of the groups the award went to the road making the second best record in its group. The citations for the awards were made by Lew R. Palmer, secretary of the Committee of Awards.

The Chicago & North Western Railway Company was awarded the plaque in Group A, which included 15 roads having fifty million or more man-hours. It was received by G. B. Vilas, vice-president and general manager. One of the rules is that the eligible contestants are those railroad units that operate under the supervision of a general manager or a superior ranking officer, except that

GROUP A—Casualties to Employees on Duty per Million Man-hours, in Train, Train-service, and Non-train Accidents, Class I Steam Railroads—50,000,000 or More Man-hour Group

(Rank based on Casualty Rate for the Year 1934)

Rank	Railroad	1923 Cas. Rate	1933 Cas. Rate	1934 Total Casual's	1934 Man-hours (000)	1934 Cas. per Million Man-hrs.
1	C. & N. W. Railway	30.15	1.67	153	59,220	2.58
2	C., M., St. P. & Pac.	24.29	2.22	214	62,204	3.44
3	C. B. & Q. Ry.	31.41	5.55	191	54,599	3.50
4	Erie	30.93	3.21	248	51,845	4.78
5	Penn.: Central Region	42.09*	4.31	341	65,366	5.22
6	Southern Ry. System	27.02	4.10	389	73,790	5.27
7	Louisville & Nash.	33.40	4.98	293	53,664	5.46
8	Missouri Pacific	42.33	6.08	318	53,519	5.94
9	N. Y. C.: Lines East	30.98†	8.10	524	87,446	5.99
10	Penn.: Eastern Region	42.09*	4.11	575	79,313	7.25
11	So. Pacific: Pac. Ls.	16.33	7.94	587	77,895	7.54
12	Illinois Central	25.31	10.02	468	61,077	7.66
13	Ches. & Ohio	17.22	8.51	511	55,890	9.14
14	B. & O. R.R.: Ls. East	38.90†	8.66	501	52,529	9.54
15	A., T. & S. F.	28.34	9.47	777	72,048	10.78
	Total	31.25	6.22	6,090	960,405	6.34

* System rate.
† Company rate.

no system or combination of operating units shall be eligible to compete with a unit of such system or combination of units; in other words, man-hours can be credited to only one contestant. This is the fifth National Safety Council award that has been won by the Chicago & North Western and its unit organizations for outstanding accomplishment in the field of railroad employee safety.

Group B includes Class I railroads having twenty to fifty million man-hours. The winner was the Atlantic Coast Line Railroad; it has won this distinction for the three alternate years it has been eligible. The citation included the statement that it has "the further distinction of recording the lowest total casualty rate of any railroad of its size in the history of the railroad employees' national safety contest—an accomplishment that required leadership, enthusiastic optimism, and persistent effort." The plaque was received by Robert Scott, director of insurance and safety.

GROUP B—Casualties to Employees on Duty per Million Man-hours, in Train, Train-service, and Non-train Accidents, Class I Steam Railroads—20,000,000 to 50,000,000 Man-hour Group

(Rank based on Casualty Rate for the Year 1934)

Rank	Railroad	1923 Cas. Rate*	1933 Cas. Rate	1934 Total Casual's	1934 Man-hours (000)	1934 Cas. per Million Man-hrs.
1	Atl. Coast Line	26.95	1.93	74	34,565	2.14
2	Union Pacific Co.	5.00	2.12	103	38,651	2.66
3	Penn.: Western Region	42.09*	3.70	158	44,099	3.58
4	Wabash	34.00	3.53	87	24,011	3.62
5	N. Y., N. H., & H.	31.31	1.58	180	48,254	3.73
6	Michigan Central	21.60	5.52	107	24,109	4.44
7	Penn.: N. Y. Zone	42.09*	4.31	146	30,864	4.73
8	B. & O. R.R.: Ls. West.	38.90†	8.66	150	30,854	4.86
9	So. Pac.: Tex. & N. O.	23.00	5.80	151	30,917	4.88
10	C., C., C. & St. L.	36.22	4.90	144	29,316	4.91
11	C., R. I. & Pac.	42.54	5.81	241	48,182	5.00
12	Norfolk & Western	26.03	6.48	220	41,996	5.24
13	N. Y. C.: Ls. West.	30.98†	8.59	252	44,117	5.71
14	Great Northern	31.32	5.34	253	42,398	5.97
15	Boston & Maine	29.36	5.23	194	30,250	6.41
16	Seaboard Air Line	18.07	6.62	213	30,388	7.01
17	Lehigh Valley	26.53	7.94	200	28,311	7.06
18	D. L. & W.	22.98	9.53	265	32,492	8.16
19	Central of N. J.	24.51	8.89	175	20,291	8.62
20	Northern Pacific	28.25	7.43	335	38,667	8.66
21	Reading	29.08	8.29	312	35,732	8.73
22	N. Y., C. & St. L.	32.07	12.82	222	20,385	10.89
23	St. Louis-San Fran.	30.35	12.58	436	32,191	13.54
	Total	28.56	5.47	4,618	781,040	5.91

* System rate.
† Company rate.

GROUP C—Casualties to Employees on Duty per Million Man-hours, in Train, Train-service and Non-train Accidents, Class I Steam Railroads—8,000,000 to 20,000,000 Man-hour Group

(Rank based on Casualty Rate for the Year 1934)

Rank	Railroad	1923 Cas. Rate	1933 Cas. Rate	1934 Total Casual's	1934 Man-hours (000)	1934 Cas. per Million Man-hrs.
1	Oregon Short Line	14.59	2.17	29	11,248	2.58
2	Nash., Chat. & St. L.	34.47	4.51	34	12,216	2.78
3	O. W. R.R. & Nav. Co.	11.72	3.96	31	9,213	3.36
4	Long Island	25.07	3.15	59	13,581	4.34
5	Pgh. & Lake Erie	37.10	7.59	52	11,478	4.53
6	Mobile & Ohio	50.88	4.02	40	8,147	4.91
7	C., St. P., M. & Oma.	27.72	3.07	60	12,019	4.99
8	M. K. & T. Ls.	36.16	8.27	119	18,861	6.31
9	Central of Georgia	19.48	6.26	80	11,808	6.78
10	Alton	27.50	6.85	79	11,202	7.05
11	Pere Marquette	28.83	6.46	114	14,739	7.73
12	In. Great Northern	54.33	10.51	74	9,419	7.86
13	Boston & Albany	41.06	7.46	105	12,140	8.65
14	Western Pacific	23.27	10.31	80	8,009	9.99
15	Gulf, Colo. & Santa Fe	37.74	8.98	108	10,354	10.43
16	Den. & Rio Gr. W'n	38.01	13.98	153	13,832	11.06
17	Delaware & Hudson	31.93	11.10	217	19,608	11.07
18	Ch. Great Western	13.58	13.72	129	9,668	13.34
19	M., St. P. & SSM.	18.79	13.22	212	15,583	13.60
20	Yazzo & Miss. Val.	41.84	10.96	123	8,368	14.70
21	Gr. Trunk Western	29.80	17.10	249	14,935	16.67
22	Texas & Pacific	50.36	13.89	293	15,084	19.42
23	Western Maryland	38.77	20.19	186	9,172	20.28
24	C. & E. I.	100.59	15.80	201	9,365	21.46
	Total	34.73	9.32	2,827	290,049	9.75

Line Railroad Company, the plaque being received by chairman of the executive committee of the Union Pacific System, F. W. Charske.

The Gulf, Mobile & Northern Railroad Company was the winner in Group D, which includes roads having from three to eight million man-hours. The plaque was received by General Manager G. P. Brock. This road operated four years out of five without an employee fatality; it was formerly in Group E, and was four times winner in that group.

The Charleston & Western Carolina Railway Company, a part of the Atlantic Coast Line, was awarded the plaque in Group E, which includes roads having from one to three million man-hours. The plaque was received by L. S. Jeffords of that road.

The Nevada Northern Railroad Company was the winner in Group F, which includes roads with less than one million man-hours. The plaque was received by E. W. Daveler, treasurer. The road did not have a single reportable employee casualty for 1934 and has not had an employee fatality for ten consecutive years.

Two awards are made to Class I switching and terminal railroads. Group A in this classification includes roads having 1,500,000 or more man-hours, and Group

GROUP D—Casualties to Employees on Duty per Million Man-hours, in Train, Train-service and Non-train Accidents, Class I Steam Railroads—3,000,000 to 8,000,000 Man-hour Group

(Rank based on Casualty Rate for the Year 1934)

Rank	Railroad	1923 Cas. Rate	1933 Cas. Rate	1934 Total Casual's	1934 Man-hours (000)	1934 Cas. per Million Man-hrs.
1	Duluth, Missabe & N'n...	9.01	1.15	14	5,194	2.70
2	Gulf, Mobile & N'n.....	31.63	3.40	15	4,555	3.29
3	Los Angeles & Salt Lk...	4.86	1.40	21	6,099	3.44
4	La. & Arkansas	25.28	5.48	18	3,880	4.64
5	Pa. Reading Seashore Ls..	....	5.56	25	5,109	4.89
6	St. Louis S. W.....	34.87	6.65	39	6,021	6.48
7	Colo. & Southern.....	34.20	7.87	24	3,602	6.66
8	Central Vermont	25.98	15.48	28	3,957	7.08
9	Gulf Coast Ls.....	38.37	5.85	45	6,347	7.09
10	Georgia	18.75	6.56	23	3,229	7.12
11	Kansas Cy. Southern.....	29.76	5.58	52	6,694	7.77
12	Illinois Terminal	20.43	10.44	29	3,670	7.90
13	Elgin, Jol. & Eastern.....	15.49	8.02	60	7,476	8.03
14	Bangor & Aroostook.....	35.57	9.71	32	3,715	8.61
15	Bess. & Lake Erie.....	32.11	8.01	49	5,273	9.29
16	Maine Central	12.58	10.76	61	6,462	9.44
17	Rutland	28.79	13.69	32	3,318	9.64
18	St. L. S. W. of Texas....	18.40	5.54	41	4,188	9.79
19	Panhandle & Santa Fe....	16.95	5.51	47	4,626	10.16
20	Fla. East Coast.....	12.43	11.78	62	5,797	10.70
21	Ft. Worth & Denver Cy...	45.31	7.59	33	3,073	10.74
22	Minn. & St. Louis.....	30.63	9.33	77	6,836	11.26
23	N. Y., Ont. & W'n.....	11.35	12.76	93	7,175	12.96
24	Ch., Ind. & L'vle.....	27.49	19.52	69	5,225	13.21
25	Atl., Birm. & Coast.....	53.93	16.06	51	3,510	14.53
26	Virginian	18.25	13.94	87	5,944	14.64
27	Sp., Port. & Seattle.....	20.29	17.46	50	3,402	14.70
28	Norfolk Southern	35.88	14.75	80	4,531	17.66
29	Rich., Fred. & Patom.....	23.39	14.60	100	5,371	18.62
30	Wheeling & Lake Erie...	50.07	28.48	191	6,945	27.50
	Total	31.71	10.18	1,548	151,224	10.24

GROUP E—Casualties to Employees on Duty per Million Man-hours, in Train, Train-service and Non-train Accidents, Class I Steam Railroads—1,000,000 to 3,000,000 Man-hour Group

(Rank based on Casualty Rate for the Year 1934)

Rank	Railroad	1923 Cas. Rate	1933 Cas. Rate	1934 Total Casual's	1934 Man-hours (000)	1934 Cas. per Million Man-hrs.
1	Char. & W'n Carolina....	29.50	1.14	2	1,812	1.10
2	S. I. Rapid Transit.....	13.26	.40	5	2,380	2.10
3	Green Bay & Western.....	14.62	3.45	3	1,225	2.45
4	Det., Tol. & Ironton.....	32.26	1.10	6	2,282	2.63
5	La., Ark. & Texas.....	20.15	20.30	3	1,031	2.91
6	Ann Arbor	30.93	2.65	7	2,306	3.04
7	C., R. I. & Gulf.....	64.65	5.28	9	2,927	3.07
8	N. Y., Susq. & W'n.....	12.75	1.15	7	1,803	3.88
9	Texas Mexican	.00	1.01	6	1,053	5.70
10	Tennessee Central	46.76	4.67	11	1,752	6.28
11	St. L., San Fran. & Tex...	91.71	12.07	9	1,231	7.31
12	Det. & Tol. Shore Li.....	17.62	12.67	8	1,008	7.94
13	Midland Valley	16.44	12.89	9	1,123	8.01
14	N. Y. C.: Peoria & E'n...	32.06*	4.15	11	1,336	8.23
15	Ch. & Ill. Midland.....	30.54	1.92	15	1,781	8.42
16	Atlanta & West Pt.....	27.09	7.88	23	2,338	9.84
17	Monongahela	26.45	6.37	15	1,329	11.29
18	Columb. & Greenv.....	22.34	17.04	12	1,059	11.33
19	Can. Pac. Ls. Vt.....	20.56	12.15	13	1,128	11.52
20	Clinchfield	33.52	13.05	29	2,311	12.55
21	Ak., Canton & Ygstn.....	46.16	12.17	15	1,074	13.97
22	Lehigh & New Eng.....	31.53	18.45	39	2,264	17.23
23	Can. Pac. Ls. Me.....	12.93	17.44	18	1,013	17.77
24	Duluth, S. Sh. & Atl.....	18.54	23.79	31	1,658	18.70
25	Georgia & Fla.....	25.93	29.66	30	1,537	19.52
26	Denver & Salt Lake.....	41.50	27.41	28	1,370	20.44
27	Tol.,Peoria & W'n.....	16.82	15.43	30	1,430	20.98
28	Can. N'l Ls. in N. Eng...	20.92	14.82	25	1,171	21.35
29	Northw'n Pacific	30.38	16.26	61	2,764	22.07
30	Pgh. & West Va.....	31.66	21.15	53	1,672	31.70
31	Mo. & N. Arkansas.....	24.00	39.70	38	1,118	33.99
	Total	28.78	11.31	571	50,286	11.36

* System rate.

GROUP F—Casualties to Employees on Duty per Million Man-hours, in Train, Train-service and Non-train Accidents, Class I Steam Railroads—Less than 1,000,000 Man-hour Group

(Rank based on Casualty Rate for the Year 1934)

Rank	Railroad	1923 Cas. Rate	1933 Cas. Rate	1934 Total Casual's	1934 Man-hours (000)	1934 Cas. per Million Man-hrs.
1	Nevada Northern	5.12	20.55	0	307	.00
2	Okl. Cy., Ada Atoka.....	39.22	11.63	0	175	.00
3	Pgh., Shaw. & N'n.....	19.47	6.40	1	976	1.02
4	Burlington-Rock Is.....	42.67	9.62	2	595	3.36
5	N. J. & N. Y.....	19.65	2.16	2	490	4.08
6	San Ant., Uv. & Gulf....	19.72	10.87	4	721	5.55
7	Cambria & Ind.....	....	14.33	2	339	5.90
8	Missouri-Illinois	14.71	5.45	5	809	6.18
9	Lake Sup. & Ishp.....	30.79	8.67	6	842	7.13
10	Utah	36.60	18.35	2	262	7.63
11	Gulf & Ship Is.....	42.63	14.25	6	754	7.96
12	San Diego & Ariz. E.....	8.29	11.49	5	584	8.56
13	Wichita Falls & So.....	36.69	21.93	4	458	8.73
14	Du., Winn. & Pac.....	21.69	15.21	9	817	11.02
15	Ft. Smith & W'n.....	14.31	14.14	8	705	11.35
16	Pgh. & Shawmut.....	22.33	8.10	6	500	12.00
17	Ft. Worth & Rio Gr.....	25.42	14.97	7	553	12.66
18	Det. & Mackinac.....	30.55	8.00	8	619	12.92
19	Miss. Central	47.19	11.27	9	641	14.04
20	Spokane Int.	16.87	20.12	8	515	15.53
21	Montour	41.44	34.09	18	837	21.51
22	Lehigh & Hud. Riv.....	19.57	39.04	16	659	24.28
23	Kans., Okl. & Gulf.....	21.75	17.44	30	607	49.42
	Total	28.74	14.28	158	13,765	11.48

Class I Switching and Terminal Roads

Casualties to Employees on Duty per Million Man-hours, in Train, Train-service and Non-train Accidents

(Rank based on Casualty Rate for the Year 1934)

GROUP A—Roads Operating More than 1,500,000 Man-hours.

Rank	Railroad	1923 Cas. Rate	1933 Cas. Rate	1934 Total Casual's	1934 Man-hours (000)	1934 Cas. per Million Man-hrs.
1	Union (Pgh)	21.62	2.61	8	3,756	2.13
2	Ind. Harbor Belt.....	52.31	4.98	22	5,148	4.27
3	B. & O.: Ch. Terminal....	34.56	5.48	21	4,674	4.49
4	Ch. River & Ind.....	51.17	5.17	18	3,298	5.46
5	Cin. Union Terminal.....	....	9.10	17	2,948	5.77
6	Peoria & Pekin Union.....	32.98	11.74	10	1,626	6.15
7	Belt Ry. of Chicago.....	57.84	7.13	23	3,066	7.50
8	T. R.R. Assn. St. L.....	45.02	22.80	144	6,696	21.51
	Total	42.39	9.83	263	31,212	8.43

GROUP B—Roads Operating Less than 1,500,000 Man-hours

Rank	Railroad	1923 Cas. Rate	1933 Cas. Rate	1934 Total Casual's	1934 Man-hours (000)	1934 Cas. per Million Man-hrs.
1	Con. & Black Lick.....	7.76	3.63	1	599	1.67
2	Lake Terminal	4.82	4.34	1	478	2.09
3	Monongahela Connecting..	20.09	7.76	4	767	5.22
4	Newburgh & So. Shore....	19.80	2.27	2	335	5.97
5	Alton & Southern.....	....	10.54	8	670	11.94
6	Detroit Terminal	22.83	8.73	9	703	12.80
7	Toledo Terminal	23.79	8.42	12	606	19.80
8	Brk. E. Dist. Terminal....	50.35	11.66	10	463	21.60
9	Galveston Wharf	73.25	43.97	39	851	45.83
	Total	32.64	13.45	86	5,472	15.72

B, less than that number. The award in Group A went to the Indiana Harbor Belt Railroad, the plaque being received by General Manager W. J. O'Brien. The Conemaugh & Black Lick Railroad was given the Class B award, Vice-President H. E. Trout receiving the plaque. This is the third National Safety Council award won by this railroad. It has a seven-year clear fatality record, 1928-1934, inclusive.

The Pullman Company has a safety contest among its eight operating zones. The award for 1934 was made to the Atlanta zone, which operated 2,675,879 man-hours without a reportable employee casualty. The plaque was received by Vice-President Hale Holden, Jr.

In addition to these awards President Long commented upon the record made by the Gulf, Colorado & Santa Fe Railway Company, which recorded the greatest number of employee man-hours without an employee fatality during the year 1934. He also announced that the banner units of the New York Central Lines had continued to operate through the year 1934 without a passenger fatality in train accidents, thus increasing the total passenger miles without such a fatality to more than 36 billion. This, said President Long, is equivalent to a passenger traveling more than 80,000 years at the moderate speed of 50 miles an hour.

A study of the tables will indicate that while the casualty rate on the railroads shows a really remarkable decrease from 1923 to 1933, there was a slight upturn in the year 1934. This is a matter of real concern, and taken in conjunction with the introduction of high speed trains, means that greater vigilance than ever must be given to the prevention of accidents.

The comment was also made that while the railroads have made a remarkable record in the saving of life and limb, the improved safety performance also promises to safeguard the jobs of the employees. The public is impressed with the fact that travel is much safer on the rails than that on some of the other common carriers. The better the safety records, the greater the traffic that can be attracted to the rails.

Odds and Ends . . .

Green Pastures

The recent death of R. B. Harrison, famous negro actor who created the part of De Lawd in the play "Green Pastures," calls to mind his railroad associations. Harrison was a protege of the late A. G. Wells, former vice-president of the Atchison, Topeka & Santa Fe. Harrison was a dining car waiter when Mr. Wells made him porter on his business car and later furthered his career.

Tooth Paste

The recent radio contest conducted by the makers of a well-known brand of tooth paste, resulted in a hurry call from the Pacific Coast for the product. Nothing daunted, the Atchison, Topeka & Santa Fe supplied the demand by handling a solid carload of tooth paste on the California Limited.

Queer Train Order

A train order was recently issued on the Los Angeles division of the Atchison, Topeka & Santa Fe, as follows:

Look out for seal on or close to track, about one mile west of San Clemente.

The marine animal had been observed on the right-of-way and it took section men some time to chase him from the tracks and get him back into the ocean.

Convertible Coupe?

Vic Kohn of New York Mills, Minn., had no idea the other night of turning his automobile into a rail-highway vehicle, but that's what happened, nonetheless. Vic's car slid off the road a few miles from his home town and stuck in the mud. Vic put it in neutral, then got out and pushed. The car gave a leap, its wheels hit the N. P. railroad crossing, throwing it into gear, and away it went down the tracks, with its owner in hot pursuit. The driverless car ran along the tracks for 7½ miles and finally came to rest on a trestle, with two wheels in the clear and spinning. Fortunately, no trains came along, meanwhile and the errant car was restored to the highway and driven back under its own power.

"It's Raining Violets"

If ever a container should break in the course of the rail-air service provided by the Railway Express Agency, the words of the old song: "It's not raining rain, you know, it's raining violets," might turn out to be literally true. The principal violet-producing section is in the vicinity of Poughkeepsie along the Hudson river. Until this year, because of the perishable nature of these flowers, the market was confined almost entirely to New York City. Now, however, the violets are loaded by rail and carried on fast schedules from the producing area to Newark, N. J., where they are transferred to planes. This arrangement, made effective in January, has broadened the violet market to include places as far distant as Dallas, Texas, and Des Moines, Iowa.

Engine Stolen in Jersey City

Someone who does things in a big way stole a 21,000-lb. steam locomotive from a warehouse at Jersey City, N. J., recently. The culprit used an elevator derrick to hoist the locomotive to a trailer which took it away. The missing locomotive was of the narrow gage type used in construction work. Lieutenant Philip Beggans of Jersey City, who is conducting the investigation, said the ferries, tunnels and highways had been checked but no one saw the locomotive leaving the city.

No Highway Competition Here

The town of Pettigrew, Ark., tucked away in the Ozarks at an elevation of 1,800 ft. above sea level, is one of the few left that is exclusively a railroad town. There is no highway into Pettigrew and its only communication with the outside world is the tri-weekly rail service to Fayetteville over the St. Paul branch of the St. Louis-San Francisco. Except for Lombard, Mont., on the C. M. St. P. & P. and the Northern Pacific, Pettigrew is probably unique in being a highwayless town, and it may be possible that a highway has been built into Lombard since this writer last was there and observed its then highwayless condition.

Pieces of Railway History for Sale in England

Unquestionably the strangest store in England, a corner of the London, Midland & Scottish locomotive stores at Crewe, has been given over to the selling of pieces of railway history—engine nameplates which have been taken off veteran passenger locomotives as they are withdrawn from service, and which the railroad is now offering for sale to locomotive enthusiasts and antiquarians. Nearly 200 of these nameplates are stored at Crewe awaiting disposal, some of them being nearly eight feet in length. All are made of brass with the name of the engine and the date of construction engraved on the metal. Many have been purchased by men whose fathers assisted in the building of the engines or who worked on them themselves. A great demand for these relics is reported, particularly in the case of the oldest engines, many of whose nameplates rival the railway itself in years, having been carried by successive generations of locomotives since the earliest days of the iron road.

Communications . . .

Locomotives, Cars and Public Relations

WASHINGTON, D. C.

TO THE EDITOR:

As a subscriber to *Railway Age*, and an enthusiast of railways, and motive power in particular, may I add my appreciation to the reaction you have been receiving to the article in your April 6 issue on "Locomotives, Cars and Public Relations."

It does seem to me a good method of economical publicity if the railroads would open up their facilities to the public more and let them see the "wheels go round" when they have a new train, locomotive, or excellent terminal facilities in a city. An opportunity to inspect these is always enthusiastically patronized, as shown by various exhibitions that have come to Union Station here in Washington in the last year.

Potential patronage is bound to follow, if enthusiasts and laymen are given the chance to satisfy their curiosity on these details of modern transportation. I belong to a small group of men who meet at each other's homes once a month to exchange experiences, discuss historical and modern motive power, pictures and data. None of us is connected in the slightest way with railroads, except through personal interest. I happen to be in the business of property management, another of our members is in the newspaper business, another a mechanical engineer, still another a real estate broker, yet all are boosters for the country's worst treated and largest industry.

We all appreciate your views toward us in the editorial and hope that the seeds that were sown may fall on virgin ground, of the railroads of the country, and that they will help us to help them get back on their own feet as one of the nation's largest industries, and not as just another one of Uncle Sam's departmental interests or experiments.

LEONARD W. RICE.

Antagonizing Supply Companies

NEW YORK.

TO THE EDITOR:

For some time I have been very much interested in the efforts which the railways are making to create better public opinion and to promote co-operation with their shippers. However, the tone of the letters which we, as a railroad supply company, receive from officers of various departments cause me to feel that the railroads are overlooking an opportunity to further this good-will and co-operation by failing to realize that those who supply them with materials are in reality shippers and are entitled to the same consideration as others. Most of the letters we receive are discourteous and reflect a belligerent attitude on the part of the writer. These letters, instead of presenting a subject in a respectful and businesslike manner, are written as if the suppliers of materials were an inconsequential factor in rail shipments and were, as a class, pursuing unethical and crooked practices.

On several occasions we have had impertinent letters from either the accounting or the purchasing department of railroads over which our freight payments total 100 times the amount of the purchases made from us. We, as a merchandising concern, would not countenance anyone in our organization writing such a letter to railroad companies and we feel likewise that the letters of the railroads should be diplomatic and reflect some indication of a desire to solicit our traffic and good-will.

Aside from correspondence, many sales representatives of shipper-supply companies have an unexpressed but antagonistic feeling toward the railroads because of the condescending and inconsiderate attitude displayed by persons in the purchasing and accounting departments whom they contact. It is a standing complaint among these shipper-supply representatives that the purchasing departments' officers and employees are the hardest to get along with because they are arbitrary and have no consideration for a man's time or the cost that his company may be put to in order to fulfill somebody's whim.

I feel that the railroad companies are missing an opportunity by not improving the relationship between their employees and these shipper-supply companies, for a continuance of the present attitude is diminishing the interest of suppliers of material in the railways as customers at a time when many of these companies are also among the largest shippers of materials over the railroads. In contrast to the attitude of officers of these railway purchasing and accounting departments is that which we find among truck and bus company employees, who are courteous in all matters, whether it is a request for quick service from us or their order for our materials. In practice, the service rendered by any company, whether merchandising or transportation, is no better than the attitude displayed by the employees toward its customers.

SALES MANAGER.

Railway Show at University of Illinois

CHAMPAIGN, ILL.

TO THE EDITOR:

We should like to thank you for your interest in the exhibit of the Railway Club at the University of Illinois on April 13, and the mention you gave in *Railway Age*, March 30. In connection with the recent discussions in your columns we thought it might be of interest to relate our experiences with "public interest" at the Open House show.

The Open House was an exhibit of the entire engineering college, meant to show the public what the engineer does, and was relatively well publicized. As a result there was an attendance of about 9,000 to prove that folks are interested in what others are doing. Fully two-thirds of this number visited the railway display. Their interest was subdivided as follows:

Dynamometer Plant—An Illinois Central 2-6-0 was in operation on the plant continuously from 10:00 a.m. until 10:00 p.m. This proved to be of the most interest and the laboratory was crowded with persons, most of whom had never seen anything like this before. There was always a line waiting to get into the cab of the operating engine.

Car Exhibit—On an outdoor sidetrack the University displayed its dynamometer car and the interurban test car. The Illinois Terminal Railroad placed one of its largest electric freight locomotives on display. By actual count kept over the greater part of the day, some 1,616 people had the interest to climb through the cars.

Electric Railway Laboratory and Signal Exhibits—Railway substation and motor equipment was operated; block signals, interlocking and mechanical models were operated.

We were surprised to find the interest which the visitors took in even the most technical details, and the questions they asked showed desire to know more of railway operation. We had some visitors who came especially to see the railway show. One visitor pointed out to the writer:

"I am with a laundry and cleaning plant at D———. Recently we noted the interest taken by the public when a bakery in town advertised that its factory was open to visitors whenever they might choose to see it. The same thing is done by steel mills, candy factories, and others. But rarely by the railroads. I often feel that the railways don't want the public to know what goes on behind the lines. Our laundry tried the visitor idea and we had about 400 come to see the plant in a month. We think it helped the business."

There is a collection of large photographs, tracing the progress of railway equipment, in the main hall of the Transportation Building, and many persons spent much time studying these. This phase of public curiosity is well known, and it would not be surprising to find that certain issues of the trade papers having well illustrated descriptions of new (and old) railway cars and locomotives become scarce much sooner than other issues not so blessed.

The exhibit described was held one day only.

G. KRAMBLES.

NEWS

The "Abraham Lincoln" to Operate on 5½-Hr. Schedule

The "Abraham Lincoln" of the Baltimore & Ohio-Alton will be run on a daily schedule of 5½ hr. between St. Louis, Mo., and Chicago, leaving St. Louis, according to present plans, at 9 a. m. and arriving in Chicago at 2:30 p. m. and returning from that city at 4:30 p. m. and arriving at St. Louis at 10 p. m.

Following the dedication of the train, which took place at Springfield, Ill., on May 15, when Henry Horner, governor of Illinois, delivered a dedicatory speech, the train will be exhibited in Illinois, Michigan, Ohio, Kentucky, Pennsylvania, Maryland, New Jersey and New York, the dates being as follows:

Springfield, Ill.	May 15–16
Lincoln, Ill.	May 16
Bloomington, Ill.	May 16
Pontiac, Ill.	May 16
Dwight, Ill.	May 16
Joliet, Ill.	May 16
Chicago	May 16–18
Detroit, Mich.	May 20
Toledo, Ohio	May 21
Lima, Ohio	May 21
Wapakoneta, Ohio	May 21
Sidney, Ohio	May 21
Troy, Ohio	May 21
Dayton, Ohio	May 21
Hamilton, Ohio	May 22
Cincinnati, Ohio	May 22
Louisville, Ky.	May 23
Aurora, Ind.	May 23
Lawrenceburg, Ind.	May 23
Blanchester, Ohio	May 24
Wilmington, Ohio	May 24
Washington Court House, Ohio	May 24
Columbus, Ohio	May 24
Newark, Ohio	May 24
Zanesville, Ohio	May 24
Cambridge, Ohio	May 24
Wheeling, W. Va.	May 24
Pittsburgh, Pa.	May 25
McKeesport, Pa.	May 27
Connellsville, Pa.	May 27
Cumberland, Md.	May 27
Martinsburg, Md.	May 27
Washington, D. C.	May 28
Baltimore, Md.	May 29
Newark, Del.	May 30
Wilmington, Del.	May 30
Chester, Pa.	May 30
Philadelphia, Pa.	May 31
Plainfield, N. J.	June 1
Elizabeth, N. J.	June 1
Jersey City, N. J.	June 1
Newark, N. J.	June 2

New York territory for several days.

Original plans called for a high-speed run from Springfield to Chicago on May 15, but because of the desirability of exhibiting the train at intermediate points, the run was not undertaken. However, an attempt to run at high speeds may be made when the train arrives in the East. In a test run recently, the train was operated from St. Louis to Chicago in 4 hr. 34 min. for the 284 miles, or at the rate of 62.2 miles per hour. A total of 124 miles was covered at the rate of 80 miles per hour or more.

Labor Has New Pension Bill

The Railway Labor Executives Association, meeting in Washington, announced on Wednesday that it had prepared for introduction into Congress a new pension bill, based on some changes in the Railroad Retirement Act recently held invalid by the Supreme Court.

New York Railroad Club Outing June 20

The New York Railroad Club's annual outing will be held on Thursday, June 20, at the Westchester Country Club, Rye, N. Y., according to a notice issued this week.

Annual Dinner of Western Railway Club

The annual dinner of the Western Railway Club will be held on May 20 at the Hotel Sherman, Chicago. L. W. Wallace, director of research of the Association of American Railroads, will speak on "What Is Not Yet, May Be."

Senate Committee Favors Wheeler Financial Investigation

The Audit and Control Committee of the Senate on Wednesday made a favorable report on Senator Wheeler's resolution proposing a Senate committee investigation of railroad financing, but the committee proposed amendments restricting the scope of the investigation and authorizing Co-ordinator Eastman to select railroads to be included.

Hiawatha Makes 111.5 M.P.H. in Test

In a test run from Milwaukee, Wis., to New Lisbon on May 15 the "Hiawatha," of the Chicago, Milwaukee, St. Paul & Pacific, covered the 141 miles in 113 min., or at an average speed of 74.9 m.p.h. The maximum speed, maintained for a distance of about three miles, was 111.5 m.p.h. On the return trip the train, consisting of a steam locomotive, a dynamometer car and five coaches, was given a series of braking tests. In one instance the train traveling at 100 m.p.h. was brought to a stop in 6,600 ft.

The train goes in service between Chicago and the Twin Cities on May 29, on a schedule of 6½ hr. Prior to inauguration, it will be exhibited at Minneapolis, Minn., on May 17; at St. Paul on May 18; midway between these two cities on May 19; at Winona, Minn., and LaCrosse, Wis., on May 20; at Madison, Wis., and Janesville on May 21; at Beloit, Wis., and Rockford, Ill., on May 22; at Milwaukee on May 23; and at Chicago on May 24. On the latter day, the train will be used by the Traffic Club of Chicago for a trip to Milwaukee, where the Chicago and Milwaukee traffic clubs will hold a joint luncheon.

Pelley Calls for Equal Regulation and End of Subsidies

Charging that millions of dollars are annually being expended by the government to subsidize the competitors of the railroads and add to the already existing surplus of transportation facilities in this country, John J. Pelley, president of the Association of American Railroads, addressing the annual convention of the National Association of Mutual Savings Banks in New York on May 8 called on the government to "Stop, Look and Listen" before continuing the practice of pouring immense sums of taxpayers' money into transportation projects that cannot be economically justified.

Mr. Pelley said that this question of subsidy has been under study for some time not only by the federal co-ordinator of transportation, but by the railroads and others. Attention was called to a study recently made by Dr. William D. Ennis of the Stevens Institute of Technology in connection with the New Jersey highway system in which it was found that motor vehicles operating in that state now pay about $32,000,000 annually, although, according to the report, they might properly pay at least $50,000,000 a year "toward determined proportions of total expenditures on major and minor rural roads and city streets." The report further found, Mr. Pelley said, that the private automobile in New Jersey is sufficiently taxed now, but that the shortage of $18,000,000 should be made up from additional taxes and fees levied against those intrastate and interstate vehicles which weigh more than 7,000 lb.

"We have," Mr. Pelley continued, "the result of a study made by three outstanding authorities on this question for the United States. They reached the conclusion that motor vehicles were subsidized in the year 1932 by about $595,000,000, and that for the period 1921 to 1932 a very conservative figure representing subsidy to highways is seven billion dollars. Relatively greater amounts have been contributed by the government in later years. There can be no question about a subsidy to waterways, for these improvements on our navigable streams are furnished and operated and maintained at taxpayers' expense. The only question that may arise is how much subsidy. We can figure more than 780 million dollars, and the amount increases annually.

"A great many studies have been made with the assistance and under the direction of the co-ordinator's staff, with regard to possibilities of economy in joint terminal operation. The records show that in studies of only 663 projects there was a pos-

sibility of saving $18,231,413 per annum. These projects, however, have been made impossible of accomplishment by reason of the co-ordinator act, which specifies that the railroads shall not have a fewer number of men than they had in May, 1933, and that no employee shall be in a worse position as to compensation than he was in May, 1933, by reason of any action taken under the Co-ordinator Act.

"We maintain it is unfair to the railroads to be prevented by law from co-ordinating facilities that will result in economies. Much has been done in the adoption of joint operation of facilities of various kinds among the railroads over a period of years, in the interest of more economical operation, and much more can and will be done if the railroads are free to act. I have in mind a record which was made several years ago which showed that there were 24,399 miles of railroad jointly operated. This record also showed that there was joint use of facilities by Class I carriers of 263 engine terminals, 1,366 l.c.l. freight houses and 1,902 passenger stations, 618 yards, 472 large bridges and 1,013 points where freight cars were interchanged at which inspection was performed by joint men. Some additions have been made to this since this information was compiled."

Mr. Pelley told how since 1920 the railroads have brought about notable accomplishments in the matter of increased efficiency and economy in operation.

"There is proposed legislation today," he continued, "introduced at the request of railroad labor, such as train limit laws, full crew laws, six hour day and others, all of which, if enacted into law, would increase the cost of the operation of the railroads in excess of one billion dollars a year. Such legislation should be prevented, not only in the interest of railroad transportation, but in the interest of the employees themselves, for the very reason that the successful future of the railroads depends upon a constant reduction in their operating expenses in order that they may bring down the cost of transportation, thereby increasing the volume of traffic, and place themselves in a better position to compete with all other means of transportation. Unnecessary additional expense will prevent this accomplishment. It will thereby reduce the number of railroad employees and be directly against their own best interests.

"The Association of American Railroads, as you all know, was organized to bring about a more perfect union in the railroad industry. It is the aim of the railroads, with the aid of this organization, to continually improve their service, increase their efficiency and economy, reduce transportation costs to the lowest possible minimum, realize every feasible improvement in methods or practices, co-ordinate terminals, eliminate duplicate and wasteful service of every kind. To bring about these desired improvements, we must be left free from the enactment of laws that will make their accomplishment difficult or impossible."

Lackawanna Exhibition Train Visited by 170,000

The Delaware, Lackawanna & Western's exhibition train of new and modernized passenger and freight power and equipment was inspected by approximately 170,000 persons during the course of its 24-day tour over the Lackawanna's lines. A total of 160,727 persons was actually clocked passing through the train and it is estimated that at least an additional 25,000 passed through uncounted, because at several places it became necessary to split the train and no count was kept of those that inspected the freight equipment, but that did not pass through the coaches.

This favorable showing was achieved despite the fact that the train encountered stormy weather at Elmira, N. Y., and Buffalo and the further fact that it was operated through part of the New Jersey territory during the Easter holidays, thus precluding visits from many college students and school children.

The train consists of a Pocono type (4-8-4) locomotive, a multiple-unit motor car, a multiple-unit trailer car, an air-conditioned coach for through joint New York-Chicago service, a combination chair and seat coach, an air-conditioned steel diner, a Diesel-electric switching locomotive, a steel hopper car, an all-steel box car for carrying flour, a refrigerator car, an automobile car equipped with loader and a caboose.

The out-of-pocket cost of the exhibition was $3,560, which included the crew expense and fuel, as well as the cost of 100,000 folders which were distributed to visitors. The Lackawanna feels that the train has done "important missionary work that should encourage increased travel," and the influence exerted by the train's freight equipment was also "gratifying for the reason that many shippers had not previously inspected modern freight equipment."

Probert to Address New York Traffic Club

L. C. Probert, vice-president of the Chesapeake & Ohio, will be the speaker at a luncheon meeting of the Traffic Club of New York, to be held on May 21 in that city. Mr. Probert will take as his subject "Over the Hill to Government Ownership and the Poor House."

I. C. C. Declines to Re-Open Rate Advance Case

The Interstate Commerce Commission on May 14 announced its denial of various petitions filed by the National Coal Association and others for reconsideration, further argument, rehearing, and modification of its findings in the report of March 26 in the rate advance case, Ex Parte No. 115.

Temiskaming Line Now Has One-Man Executive

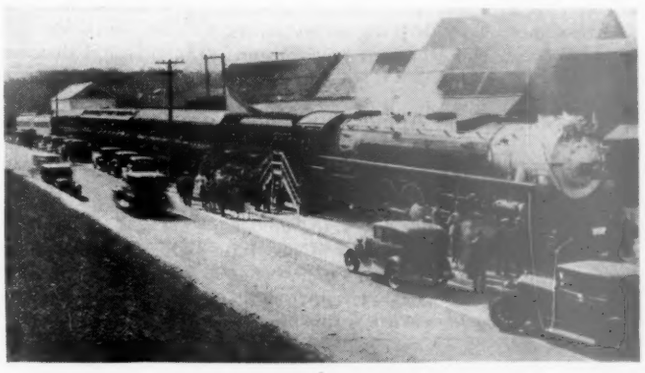
Premier Mitchell F. Hepburn, of Ontario, has announced that Armand Racine, of Windsor, Ont., and Charles Callagher, of North Bay, have resigned from the three-man Temiskaming & Northern Ontario Railway Commission and the railway in future will be administered by one commissioner, Col. Malcolm Lang of Haileybury, chairman of the commission.

Railway Employment Decreased in April

Class I railroads have reported to the Interstate Commerce Commission a total of 976,526 employees as of the middle of the month of April, a decrease of 3.98 per cent as compared with the number in April, 1934, and of 0.11 per cent as compared with March, 1935. Employees in the maintenance of equipment and stores departments showed a decrease of 6.52 per cent as compared with April, 1934.

New Jersey Board Allows Ex Parte 115 Rate Increases

The Board of Public Utility Commissioners of New Jersey, in a decision of May 8, vacated its previous suspension of the increases in intrastate freight rates



Photos by T. T. Taber

The Delaware, Lackawanna & Western exhibition train at Madison, N. J.—Picture on left shows freight equipment, while on the right is a view of the steam locomotive and passenger cars

which New Jersey railroads proposed in accordance with the Ex Parte 115 decision. This latest action allows the emergency charges on intrastate traffic, but stipulates that the increases on carload shipments shall in no case result in a greater maximum increase than 7 per cent of the total line-haul charges heretofore in effect.

I. C. C. Reopens N. Y. Warehouse Investigation

The Interstate Commerce Commission has issued an order re-opening for further hearing its investigation of warehousing and storage of property by carriers at the port of New York for the purpose of bringing the record down to date. Hearings are to be held at New York beginning on June 24 before Director W. P. Bartel of the commission's Bureau of Service.

Capitol Limited 12 Years Old

The Baltimore & Ohio's "Capitol Limited," which operates between New York, Washington, D. C., and Chicago, celebrated the twelfth anniversary of its inauguration on May 13. Counting its trips in both directions, this train has traveled more than 17,000,000 miles with a 12-year on-time record of 93.01 per cent. Under its recently-expedited schedule the Capitol Limited now makes the trip between Washington and Chicago in 17 hours.

North Western Contemplates Restoration of Old Rates

The restoration of freight rates on selected commodities in effect prior to the addition of surcharges on April 18, which were ordered by the Interstate Commerce Commission, is being considered by the Chicago & North Western. The reduction in the movement of certain commodities since the new rates were placed in effect has caused the North Western to consider asking the commission for permission to re-establish the old rates.

Overnight L.C.L. Service Between Montreal and Toronto

Overnight delivery of less-than-carload freight between Montreal and Toronto and directly intermediate points will be made by the Canadian National and Canadian Pacific. The improvement in shipping follows the announcement of new pickup and delivery rates by the two railways, which became effective May 1. The new service will also speed up deliveries to and from all points west of Toronto in southwestern Ontario.

Reduced Rates on Apples Suspended

The Interstate Commerce Commission has suspended from May 13 until December 13 the operation of tariff schedules which propose to reduce the rates on apples, in carloads, from $1.25 to $1 per 100 lb., to expire with June 30, 1935, when from north Pacific Coast territory eastbound to certain destinations in the so-called "C" and "C-1" groups, which substantially embraces certain points in Illinois and Indiana adjoining the Illinois-Indiana state line, also certain points in Kentucky, Tennessee, Mississippi, Louisiana, Florida and Alabama located between the Mississippi river, on the west, and a line drawn from Evansville, Ind., to Pensacola, Fla., through Birmingham, Ala., on the east, except to points on the Louisville & Nashville or Southern.

I. C. C. Reopens Power Reverse Gear Case

On petition of the complainants, the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen and Enginemen, the Interstate Commerce Commission has reopened for reconsideration and further hearing the case in which it ordered the railroads to equip their locomotives with power reverse gear. The original order was set aside by the Supreme Court of the United States on the ground that the commission had not made a specific finding that the mechanical device was necessary for safety.

New York Central Introduces Hiker Trains

The New York Central's first special train for hikers was operated from New York to Beacon, N. Y., on May 12. The excursion, for which a special low round-trip fare amounting to less than one cent a mile was offered, attracted 229 passengers. The train left Grand Central Terminal at 9:30 a. m., Daylight Saving Time, and made three stops en route to Beacon, thus giving the passengers a choice of departure points for their hikes. On the return trip it left Beacon at 5 p. m. The New York Central expects to operate similar hiker excursions to different localities on coming Sundays.

Wabash to Expedite "Banner Blue"

The Wabash on June 2 will convert its "Banner Blue Limited," standard steam train operating between Chicago and St. Louis, Mo., into a high speed train by reducing its schedule from 6½ to 5½ hrs. for the 286 miles. Under the new schedule, which averages 52 m.p.h., the train will leave Chicago at 12:30 p. m. instead of 11:30 a. m. and will arrive in St. Louis at 6 p. m. as at present. Returning, it will leave St. Louis at 12:20 p. m. instead of 12:05 p. m. and will arrive in Chicago at 5:50 p. m. instead of 6:35 p. m. Stops will be made at Englewood, Ill., Decatur, and Delmar avenue, St. Louis.

The action taken by the Wabash follows the announcement made by the Alton that it will reduce the time to 5½ hrs. when its "Abraham Lincoln" is placed in service on July 1, and that made by the Illinois Central to the effect that it will reduce the time to 5½ hrs. when it places its Diesel-electric trains in service.

North Western and Bus Line to Honor Transfers

The Chicago & North Western and the Chicago Motor Coach Company, from June 1 to September 30, will sell a special 10-ride bearer, commutation, railroad ticket which will contain 10 coupons good on the bus line. Under the tariff, whereby the bus line acts as a feeder to the railroad, the 10-ride railroad ticket is good on trains moving in both directions between Austin boulevard, Ill., Parkview, Wilson avenue or Rogers Park and Chicago, while the motor coach coupons are good on coaches running to and from the four originating stations. The price of these tickets is as follows:

	Special 10-ride coupon ticket	Standard 10-ride ticket
Between Chicago and Austin boulevard	$1.90	$1.40
Between Chicago and Parkview	1.70	1.20
Between Chicago and Wilson avenue	1.70	1.20
Between Chicago and Rogers Park	2.20	1.79

Smoke Abatements Convention

The Smoke Prevention Association, Inc., will hold its annual meeting at the Hotel Statler, St. Louis, Mo., on June 4-7. The program provides for a discussion of the various problems of smoke abatement, including an address by J. M. Whalen, chairman of the Smoke Abatement committee of the city of St. Louis, Mo., Railroad Section, on Railroad Smoke Abatement in St. Louis. This address, to be given on June 4, will be accompanied by motion pictures showing terminal handling of locomotives. An address by C. P. Foster, St. Louis, Mo., on Railroad Smoke Prevention, to be given on June 6, also will be accompanied by motion pictures showing locomotive steam distribution. On the same day, the program will include an address by Walter Scott, locomotive engineer of the Chicago & North Western, on 16 Years' Railroad Smoke Abatement in Chicago; an address by a representative of the Busch-Selzer Company on Diesel Oil Electric Locomotives and an address by F. G. Lister, superintendent of motive power of the St. Louis-San Francisco.

The President's Transportation Message

President Roosevelt's frequently promised message to Congress urging a program of transportation legislation has again been delayed but he said on Wednesday that he still hoped to be able to send it to Congress during the week. The message has been written but he desired to consult one or two persons about it. Chairman Rayburn of the House committee on interstate and foreign commerce conferred with the President on Monday. The President said the message would probably cover the question of an extension of the office of co-ordinator, which was taken as an indication that he would favor the passage of the Crosser-Wheeler resolution to extend for a year the provisions of the emergency transportation act, which expires on June 16, unless more permanent legislation is enacted.

The sub-committee of the House committee on interstate and foreign commerce is still working on proposed amendments to the bus and truck bill as passed by the Senate, while the full committee is still occupied with the public utility bill.

Tie Stocks Smaller Than Year Ago

Reports filed with the Railway Tie Association by 13 companies supplying about 80 per cent of the crossties produced by commercial firms in America show that these companies had 6,292,091 ties on hand

on April 1. This number represents a slight increase as compared with the number of crossties on hand on March 1, 1935, but it is a decrease of 993,915 ties, or 13.6 per cent, as compared with the number in stock on April 1, 1934.

Of the ties available on April 1, 3,577,052, or 56.8 per cent of the total, were 8 ft. long and 2,715,039, or 43.2 per cent, were 8 ft. 6 in. long. U-ties for use untreated totaled 386,136, or 6.1 per cent of the total, while oak ties for treatment numbered 4,195,025, or 66.7 per cent of the total. All other species for treatment totaled 1,710,930 ties, or 27.2 per cent of the inventory.

As usual the largest number of ties in stock (2,641,116) was reported by District No. 4, which includes Kentucky, Tennessee, Alabama, Mississippi and that portion of Louisiana east of the Mississippi river. The smallest number (34,268) was reported by District No. 5, which includes Michigan, Wisconsin and Minnesota.

Steam Railway Accident Statistics January, 1935

The Interstate Commerce Commission's completed statistics of steam railway accidents for the month of January, now in preparation for the printer, will show:

Item	Month of January 1935	1934
Number of train accidents:		
Total	642	513
(At highway grade crossings, included in total)	17	12
Number of casualties in train, train-service and nontrain accidents:		
Trespassers:		
Killed	139	129
Injured	186	177
Passengers on trains:		
Killed	3	—
Injured	267	120
Employees on duty:		
Killed	59	43
Injured	1,466	1,295
All other nontrespassers:*		
Killed	131	138
Injured	709	609
Total—All classes of persons:		
Killed	332	310
Injured	2,628	2,201

* Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers,* were as follows:

Killed	124	128
Injured	470	460

Twin Zephyr Service to Be Doubled

The Chicago, Burlington & Quincy, on June 2, will double its Twin Zephyr service between Chicago and the Twin Cities by placing each train on a daily round-trip schedule. One of the Zephyrs will leave Chicago at 8 a. m. and will arrive at St. Paul, Minn., at 2:30 p. m. and Minneapolis at 3 p. m.; and the other will be run southward on a similar schedule. On the return trip, one train will leave Chicago at 4 p. m. and will arrive at St. Paul at 10:29 p. m. and Minneapolis at 10:59 p. m., while the other twin will start from the Twin Cities on a similar schedule. With this arrangement, each train will travel 882 miles a day, as compared with 441 miles a day at present.

During their first three weeks of operation, the Twin Zephyrs carried 3,539 revenue passengers, an average of 85 each way daily. During this period, 887 applications for seats, an average of 42 per day, could not be filled.

Coincident with the change in the schedule of the Zephyrs, that of the Blackhawk will be revised and shortened 90 min. It will leave Chicago at 8 p. m. instead of 6:30 p. m. and will arrive in St. Paul at 5:35 a. m. instead of 5 a. m. and at Minneapolis at 6:15 a. m. instead of 7:45 a. m.

Annual Meeting of Freight Claim Division

The Freight Claim division of the Association of American Railroads, which will hold its annual meeting at the Sherman Hotel, Chicago, on May 21–23, has announced the following program:

Tuesday Morning, May 21

Address (speaker to be announced later)
Address—H. M. Moors, chairman of the division and freight claim agent of the Texas & New Orleans—Louisiana Lines
Memorial service
Report of secretary

Tuesday Afternoon

Election of officers
Selection of dates and place for 1936 annual session
Report of tellers on appeal committee election
Balloting for arbitration committees
Report of Committee on Rules of Order

Wednesday Morning

Report of tellers on election of arbitration committees
Report of Committee on Freight Claim Prevention
(1) Co-ordinated and More Effective Prevention Activities; address by H. T. Lively, general claim agent of the Louisville & Nashville
(2) More Effective Prevention Activities by Freight Claim Conferences; address by C. L. Jellinghaus, superintendent of property protection of the New York Central
(3) Action by Individual Lines to Increase Efficiency of Prevention Activities and Co-ordinate Work with Other Lines; address by O. Maxey, superintendent of freight loss and damage prevention of the Chicago, Rock Island & Pacific
(4) General Prevention Activities—Suggestions from Floor
(5) Open discussion
Action on report of Committee on Freight Claim Prevention

Wednesday Afternoon

Claim office efficiency
Report of General committee
Report of General committee regarding principles and practices
Report of Committee on Freight Claim Rules

Thursday Morning

Report of Committee on Freight Claim Rules (continued)

Thursday Afternoon

Report of Committee on Freight Claim Rules (continued)
Announcement of personnel of arbitration committees

I. C. C. Order Disapproved as Ambiguous

The Supreme Court of the United States has reversed the decree of a three-Judge Federal District Court for southern New York dismissing a suit to enjoin enforcement of an order of the Interstate Commerce Commission requiring railroad companies transporting livestock into stockyards and other companies performing switching services to cease and desist from imposing on consignees a yardage charge on livestock where delivery is taken at the unloading pens, and providing for reparation therefor; 8 F. Supp. 825.

The suit was brought by 24 railroads against the United States and the Commission. Twenty-one are line carriers and the other three perform only switching service. The Union Stockyard and Transit Company and the Hygrade Food Products Corporation, complainant before the Commission, intervened. By its complaint to the Commission the Hygrade Company attacked as unreasonable and in violation of Section 1 of the Interstate Commerce Act the carriers' tariff charges applicable to switching livestock to its packing plant. And it assailed as inapplicable the yardage charge collected by the Stock Yards Company.

The Supreme Court held that "the Commission, in respect of the shipments covered by the order, had made no definite finding as to what constitutes complete delivery or where transportation ends. Its report does not disclose the basic facts on which it made the challenged order. This court will not search the record to ascertain whether, by use of what there may be found, general and ambiguous statements in the report intended to serve as findings may by construction be given a meaning sufficiently definite and certain to constitute a valid basis for the order.

"In the absence of a finding of essential basic facts, the order cannot be sustained." —Atchison, Topeka & Santa Fe et al, v. United States, Interstate Commerce Commission et al. Opinion by Mr. Justice Butler. Mr. Justice Stone, in a separate opinion, in which Justices Brandeis and Cardozo joined, thought the judgment should be affirmed. Decided April 29, 1935.

Carrier's Liability on Bills of Lading Marked "S. L. & C."

A shipper purchased ten carloads of clean rice of fine quality, nine at Jonesboro, Ark., and one at DeWitt, Ark. The rice was loaded into cars of the St. Louis Southwestern, and moved over its line from the points of origin to Stuttgart, Ark., under domestic or local bills of lading, in which the shipper was named as consignor and consignee. The cars had been loaded by the shipper and each of the bills recited that the contents of the cars were a certain number of "pockets clean rice" of a certain weight, contents and condition of packages unknown, and the bills bore the notation "S. L. & C." On their arrival at Stuttgart the carrier spotted the cars at the shipper's plant. He unloaded the rice and reloaded the cars with rice screenings, worth only a small amount as compared with original contents of the cars. Shortly thereafter the shipper made out and presented to the carrier's agent at Stuttgart exchange or reconsignment order bills of lading, each covering a certain number of "pockets clean rice," giving the weight. Each bill recited "contents and condition of contents of packages unknown," and bore the notation "S. L. & C." and contained the statement that the bill was issued in exchange for a bill of lading issued at the point of origin on a specified date. The consignor was the shipper, and the shipment was consigned to its order; the destination of seven cars was New Orleans; of two, Charleston, S. C., and of one, Philadelphia. The ten reconsignment bills of lading, with drafts attached, were purchased by the Boatmen's National Bank from the shipper in the regular course of business. The drafts were not paid. The seven cars sent to

New Orleans were delivered to the bank, which paid the freight and sold the screenings at the market price. The other three cars were not delivered to the bank. The shipper became bankrupt and the bank lost a large sum of money because of the purchase of the bills of lading. It sued the carrier, claiming that the bills of lading entitled it to receive the rice originally loaded at points of origin.

The carrier's contention was that the bills gave the bank merely the right to receive the screenings the shipper placed in the cars at Stuttgart.

The Eighth Circuit Court of Appeals held, 75 F. (2d.) 494, that the carrier was liable to the bank for the value of the rice shipped under the original bills, notwithstanding that the shipper had unloaded the rice at Stuttgart without the carrier's knowledge. The court said that "since the reconsignment bills of lading could only be issued for shipments that had not 'broken bulk,' the notation 'S. L. & C.' could be regarded as referring only to the load and count of the shipper at points of origin, because there could be no reloading or recounting of the shipment at Stuttgart if the cars were reconsigned from that point."

The court did not find that the exact question presented had ever been passed upon before.

Judgment of the Federal District Court for eastern Arkansas on a directed verdict for the railroad was reversed.

Construction

BALTIMORE & OHIO.—Bids will be received by H. A. Lane, chief engineer, Baltimore & Ohio Central building, Baltimore, Md., until 1 p. m. Eastern Standard Time, May 23, for grading, construction of reinforced concrete highway bridge over railroad track, pavements and sewers, etc., in connection with the elimination of grade crossing at Scottsville—Mumford State highway No. 5046, Mumford, N. Y.

BESSEMER & LAKE ERIE.—The Pennsylvania Public Service Commission has ordered this road to submit plans for the substructure and superstructure of a new bridge, to carry its tracks over the grade of Little Deer Creek Valley road, at Russellton, Pa.; the estimated cost of this improvement is $85,000.

LONG ISLAND.—A contract has been given to the Wilson & English Construction Company, New York, for grade crossing elimination work to carry the tracks of the Long Island over Laurelton Parkway at Rosedale, Long Island, N. Y.

NEW YORK CENTRAL.—The elimination of the Ridge road crossing of the New York Central in the town of West Seneca, N. Y., has been directed by the New York Public Service Commission. This is to be accomplished by placing the highway above the grade of the railroad, at an estimated cost of $90,520. The grade separation structure is to span space for four tracks.

Equipment and Supplies

P.W.A. Loans to Railroads

GULF, MOBILE & NORTHERN.—An allotment of $212,500 for a loan to this company was announced on May 9 by Public Works Administrator Harold L. Ickes. The money will be used to purchase and lay new rails and fastenings, $162,800 being for the purchase of 3,218 tons of rail and fastenings and $49,700 being to pay the company's track forces for laying the rail, which will be done in Louisiana. The money for this loan comes from the old public works appropriations and not from the new work relief appropriation. The order for the rail and fastenings was placed with the Tennessee Coal, Iron & Railroad Company.

LOCOMOTIVES

THE BANGOR & AROOSTOOK is about ready to negotiate for two new heavy, freight, Mountain type locomotives.

FREIGHT CARS

THE BANGOR & AROOSTOOK is ordering material to build two caboose cars in its own shops at Derby, Maine.

CAMBRIA & INDIANA.—Bids will be received by President A. L. Horst, at Philadelphia, Pa., until 12 o'clock noon, Daylight Saving Time, May 21, for the repair of hopper bottom coal cars.

PASSENGER CARS

NEW YORK RAPID TRANSIT COMPANY (B. M. T.).—The Transit Commission has approved orders for 25 articulated five-section train units for service on this road's elevated and subway lines as follows: To the Pullman-Standard Car Manufacturing Company, 15 units and to the St. Louis Car Company, 10 units. An item on this equipment appeared in the *Railway Age* of April 6.

IRON AND STEEL

THE AKRON, CANTON & YOUNGSTOWN has ordered 7,600 tons of rails from the Carnegie Steel Company.

LONG ISLAND.—The Wilson & English Construction Company, which has a contract for grade crossing elimination work on this road at Rosedale, N. Y., has ordered 540 tons of steel for this work from the McClintic-Marshall Corporation.

MISCELLANEOUS

THE CHICAGO, BURLINGTON & QUINCY has placed an order with the Timken Roller Bearing Company, Canton, Ohio, for roller bearings and boxes for all axles on one 4-8-4 freight locomotive, the engine trucks and tender of which are already equipped with Timken bearings.

CHICAGO & WESTERN INDIANA, CHICAGO, ROCK ISLAND & PACIFIC, PENNSYLVANIA.—Orders for the installation of coal mixing and withdrawal chutes in certain of their locomotive coaling stations have been placed by these roads with the Ross & White Company, Chicago.

Supply Trade

Amendment to Railway Car Building Code Approved

The National Industrial Recovery Board has announced approval of two amendments to the code of fair competition for the railway car building industry, said to be designed to save industry members from losses frequently incurred in the past by using defective materials furnished by customers which resulted in rejection of their finished products. The amendment to section 1 of Article VII is designed to obviate the confusion which has resulted from the present provision, since one employer, in making a bid, was not able to determine whether others were invited to bid on a project. A new section was added to Article IX, prohibiting the making of allowances in quotations for materials to be furnished by a customer, except those in his bona fide inventory, or where the source of supply is specified by the customer, except in the case of specialties.

L. W. Lyons, whose election as treasurer of the **Westinghouse Electric & Manufacturing Company,** with headquarters at East Pittsburgh, Pa., was announced in the *Railway Age* of April 27, was born at Pittsburgh, and received his education in the schools of that city. At the age of 18 he served in a clerical position with an industrial concern and became

L. W. Lyons

interested in the subject of credits and credit management. Mr. Lyons joined the Westinghouse organization in 1904, since which time he has continuously been a member of the credit department, for many years serving as manager of this department; he has also held the positions of assistant secretary and assistant treasurer. Mr. Lyons has taken an active part in the affairs of several credit associations.

The Harnischfeger Corporation, Milwaukee, Wis., and the **Caterpillar Trac-**

tor Company, Peoria, Ill., have entered into a co-operative arrangement for the building of Diesel-powered generator sets, ranging in capacities from 35 to 60 kw.

J. D. Underhill, sales manager of the **Okonite Company,** the **Okonite Callender Company** and the **Hazard Insulated Wire Works,** has been elected vice-president of these companies, with headquarters at 501 Fifth avenue, New York.

The General Refractories Company, Philadelphia, Pa., has appointed the **Broadway Manufacturing Company,** Knoxville, Tenn., as dealer agents in the Knoxville area, and the **Shadbolt & Boyd Company,** Milwaukee, Wis., as dealer agents in the Milwaukee area.

Lee Wright, formerly manager of the heavy hardware department of the **Zion's Co-operative Mercantile Institution,** Salt Lake City, Utah, has been appointed sales representative for the **Republic Steel Corporation,** Youngstown, Ohio, with headquarters at 401 Atlas building, Salt Lake City.

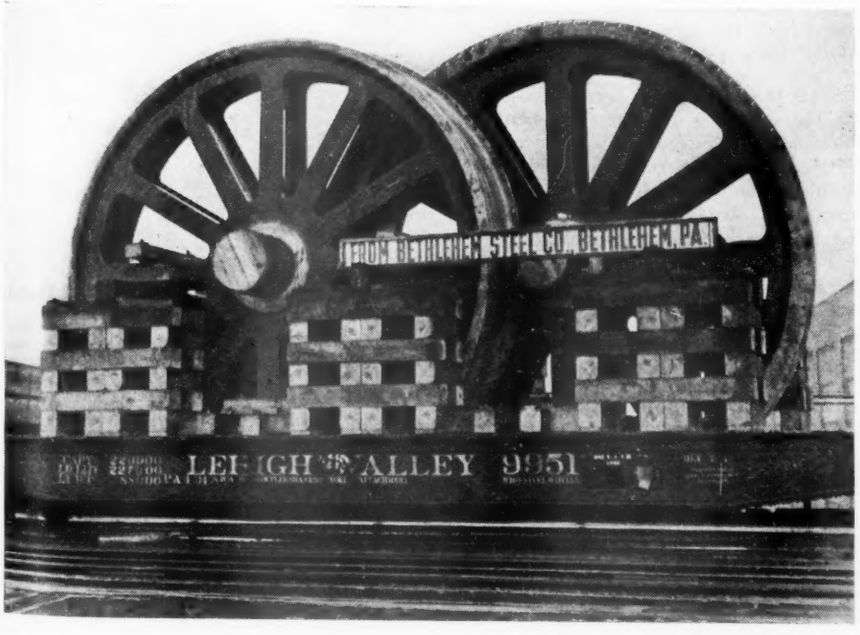
OBITUARY

James D. Archibald, superintendent of field service for the Syntron Company, Pittsburgh, Pa., died on April 18, following a three months' illness. Prior to becoming connected with the Syntron Company seven years ago, Mr. Archibald had served in the maintenance of way department of the Pennsylvania for 26 years, during many years of which he served as supervisor of track at various points.

Edward M. Adams, first vice-president in charge of sales and a director of the Inland Steel Company, Chicago, who died at Hot Springs, Ark., on May 8, following a heart attack which occurred on April 24, was born at Cherry Valley, Ill., on December 1, 1876. As a young man he was in the employ of the Illinois Central and later served a term as mayor of Harvey, Ill. Subsequently, he was employed by the Buda Company, Harvey, as purchasing agent and in other capacities. On June 17, 1907, he entered the employ of the Inland Steel Company as secretary of the company in charge of the credit department and was also active in a sales capacity. In 1918, he was elected a director of the company and, in 1921, became vice-president and secretary. On January 31, 1922, he was elected first vice-president and general sales manager, which position he held until his death. At the time of his death he was also president of the Deer Creek Mercantile Company and a director of the Indiana Harbor Homes Company. He was a member of the Commercial committee of the American Iron and Steel Institute.

Edward M. Adams

* * * *



Sheave Wheels for New Haven Bridge at Buzzards Bay, Mass.

This picture was taken recently at Waterbury, Conn., when this unusual shipment was en route on the New Haven to the construction site of a lift bridge to carry that road's tracks over the Cape Cod Canal. The wheels, 16 ft. 1 in. in diameter, had to be loaded onto a "bottomless" flat car.

Financial

ATLANTIC COAST LINE.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $12,000,000 of 10-year collateral trust 5 per cent notes and to pledge $25,000,000 of its general unified mortgage 50-year series A 4½ per cent gold bonds as security therefor. The notes are authorized to be sold at 97½, which will make the average annual cost to the railroad approximately 5.325 per cent.

BALTIMORE & OHIO.—*New Director.*—At the regular monthly meeting of the board of directors of this company on May 15 Robert A. Taft, of Cincinnati, was elected a member of the board, subject to the approval of the Interstate Commerce Commission.

CHICAGO, BURLINGTON & QUINCY.—*Annual Report.*—The 1934 annual report of this company shows net income, after interest and other charges, of $4,454,760, as compared with net income of $5,598,023 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Average Mileage Operated	9,143.98	9,237.41	−93.43
RAILWAY OPERATING REVENUES	$80,288,159	$78,496,975	+$1,791,183
Maintenance of way	9,860,326	8,561,684	+1,298,642
Maintenance of equipment	12,431,389	12,140,499	+290,889
Transportation	28,564,565	27,374,245	+1,190,320
TOTAL OPERATING EXPENSES	58,007,982	54,361,598	+3,646,383
Operating ratio	72.25	69.25	+3.00
NET REVENUE FROM OPERATIONS	22,280,176	24,135,376	−1,855,199
Railway tax accruals	5,783,596	6,918,696	−1,135,100
Railway operating income	16,471,456	17,196,224	−724,768
Hire of equipment—Net. Dr.	1,679,712	1,375,888	+303,824
Joint facility rents—Net Dr.	2,140,808	2,329,111	−188,303
NET RAILWAY OPERATING INCOME	12,650,936	13,491,225	−840,289
Non-operating income	1,254,168	1,561,829	−307,661
GROSS INCOME	13,905,104	15,053,054	−1,147,950
Interest on funded debt	9,084,635	9,084,635	.....
TOTAL DEDUCTIONS FROM GROSS INCOME	9,450,344	9,455,030	−4,686
NET INCOME	$4,454,760	$5,598,023	−$1,143,263

ILLINOIS CENTRAL.—*R. F. C. Loan.*—This company has applied to the Reconstruction Finance Corporation for a five-year extension of loans amounting to $7,783,000.

MISSOURI - KANSAS - TEXAS.—*R. F. C. Loan.*—The Interstate Commerce Commission has approved an additional loan of $2,300,000 to this road from the Reconstruction Finance Corporation on the road's application for $6,000,000.

NEW YORK, CHICAGO & ST. LOUIS.—*Annual Report.*—The 1934 annual report

of this company shows net income, after interest and other charges, of $58,633, as compared with net deficit of $1,205,636 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Average Mileage Operated	1,660.64	1,660.34	+0.30
Railway Operating Revenues	$33,143,864	$30,647,506	+$2,496,358
Maintenance of way	3,511,251	2,999,053	+512,198
Maintenance of equipment	4,899,699	4,652,729	+246,970
Transportation	11,636,920	10,581,804	+1,055,115
Total Operating Expenses	22,692,256	20,734,957	+1,957,298
Operating ratio	68.46	67.66	+0.80
Net Revenue from Operations	10,451,608	9,912,548	+539,060
Railway tax accruals	1,676,056	1,641,605	+34,450
Railway operating income	8,770,784	8,264,649	+506,135
Equipment rents—Net	2,779,654	2,612,692	−166,962
Joint facility rents—Net	481,702	435,069	−46,633
Net Railway Operating Income	5,509,427	5,216,887	+292,539
Gross Income	7,588,975	6,638,848	+950,127
Rent for leased roads	39,967	89,263	−49,296
Interest on funded debt	7,421,693	7,677,172	−255,478
Total Deductions from Gross Income	7,530,341	7,844,485	−314,143
Net Income	$58,633*	$1,205,636	+$1,264,270

* Deficit.

Northwestern of Southern Carolina.—*Abandonment.*—The receiver has applied to the Interstate Commerce Commission for authority to abandon its line from Wilson's Mill to Sumter, S. C., and a branch from Sumter to Camden, 76.5 miles.

Rock Island Lines.—*Annual Report.*—The 1934 annual report for this road shows net deficit, after interest and other charges, of $12,100,691, as compared with net deficit of $11,055,215 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Railway Operating Revenues	$66,961,688	$64,848,448	+$2,113,240
Maintenance of way	7,297,779	6,939,185	+358,593
Maintenance of equipment	14,869,516	13,816,068	+1,053,447
Transportation	27,491,219	25,473,852	+2,017,366
Total Operating Expenses	56,875,188	52,435,395	+4,439,793
Operating ratio	84.94	80.86	+4.08
Net Revenue from Operations	10,086,499	12,413,053	−2,326,553
Railway tax accruals	4,355,000	5,340,000	−985,000
Railway operating income	5,704,724	7,050,458	−1,345,734
Equipment rents—Dr.	2,926,626	2,966,642	−40,016
Joint facility rents—Dr.	1,099,298	1,086,249	+13,048
Net Railway Operating Income	1,678,799	2,997,566	−1,318,766
Non-operating income	495,531	647,179	−151,648
Gross Income	2,174,331	3,644,745	−1,470,414
Rent for leased roads	155,286	155,286	.....
Net Deficit	$12,100,691	$11,055,215	−$1,045,475

St. Louis Southwestern.—*Annual Report.*—The 1934 annual report of this company shows net deficit, after interest and other charges, of $1,145,436, as compared with net deficit of $1,536,894 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Average Mileage Operated	1,827.37	1,894.93	−67.56
Railway Operating Revenues	$14,125,660	$12,953,394	+$1,172,265
Maintenance of way	1,507,456	1,438,430	+69,025
Maintenance of equipment	2,034,065	1,826,538	+207,526
Transportation	4,717,390	4,197,926	+519,464
Total Operating Expenses	9,891,149	9,063,694	+827,454
Operating ratio	70.02	69.97	+0.05
Net Revenue from Operations	4,234,511	3,889,699	+344,811
Railway tax accruals	832,250	866,683	−34,433
Railway operating income	3,393,392	3,017,842	+375,550
Hire of freight cars—Dr.	1,028,097	853,008	+175,089
Net Railway Operating Income	1,958,645	1,789,740	+168,905
Non-operating income	86,936	79,401	+7,535
Gross Income	2,045,582	1,869,141	+176,440
Interest on funded debt	3,142,602	3,358,345	−215,743
Total Deductions from Gross Income	3,191,018	3,406,035	−215,017
Net Deficit	$1,145,436	$1,536,894	−$391,457

St. Louis Southwestern.—*R. F. C. Loan.*—This company has applied to the Reconstruction Finance Corporation for a five-year extension of loans amounting to $17,882,250.

The company has also applied to the commission for authority to renew $4,500,000 of notes to banks.

Seaboard Air Line.—*Securities.*—A plan for the exchange of equipment-trust certificates of the Seaboard Air for receivers' certificates and the refunding of receivers' certificates now outstanding has been forwarded to owners of these securities by the receivers. The plan includes a provision for the exchange of $9,145,000 of receivers' certificates due on February 1, 1935, into receivers' certificates due on February 1, 1945, par for par. The exchange of all equipment-trust certificates, Series 66, aggregating $12,250,000, par for par, into receivers' certificates maturing on February 15, 1945, also is provided for. The new certificates would bear interest at 2 per cent from February 1, 1935, to February 1, 1938; 3 per cent from February 1, 1938, to February 1, 1940, and 3½ per cent thereafter to maturity. The plan provides also for the exchange of $4,470,000 receivers' certificates, Series B and C, into an equal principal amount of receivers' certificates, Series BX, maturing February 1, 1940, and bearing interest at 4 per cent annually. Postponement of mortgage foreclosure sales and of impounding of income by underlying mortgage trustees until February 1, 1940, unless required by the court, and payment of interest on certain underlying bonds are provided. The five underlying bond issues that will receive one-half year's interest annually on July 1 from 1935 to 1939, inclusive, are: Seaboard & Roanoke first mortgage extended 5s, 1931; Raleigh & Augusta Air Line first mortgage extended 5s, 1931; Carolina Central first consolidated mortgage 4s, 1949; Raleigh & Gaston first mortgage 5s, 1947, and Florida Central & Peninsula first consolidated mortgage 5s, 1943. The trustees of ten underlying bond issues retain the right to apply to the court to exercise its discretion to direct the receivers to pay additional interest on any underlying bonds. Five issues aggregating $15,525,000 have matured and are in default.

Western Maryland.—*Annual Report.*—The 1934 annual report of this company shows net income, after interest and other charges, of $995,255, as compared with net income of $936,050 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Average Mileage Operated	888.85	891.79	−2.94
Railway Operating Revenues	$13,883,274	$12,345,048	+$1,538,226
Maintenance of way	1,863,418	1,583,674	+279,744
Maintenance of equipment	3,026,056	2,301,642	+724,413
Transportation	3,589,708	3,119,417	+470,290
Total Operating Expenses	9,444,083	7,845,336	+1,598,746
Operating ratio	68.02	63.55	+4.47
Net Revenue from Operations	4,439,191	4,499,711	−60,519
Railway tax accruals	717,716	736,549	−18,832
Railway operating income	3,720,519	3,760,567	−40,048
Hire of equipment—Net	377,295	453,833	−76,537
Net Railway Operating Income	4,106,178	4,060,202	+45,975
Total other income	127,048	142,112	−15,063
Gross Income	4,233,226	4,202,314	+30,912
Rent for leased roads	55,188	56,749	−1,561
Interest on funded debt	2,704,303	2,705,100	−796
Total Deductions from Gross Income	3,237,971	3,266,263	−28,292
Net Income	$995,255	$936,050	+$59,204

Average Prices of Stocks and of Bonds

	May 14	Last week	Last year
Average price of 20 representative railway stocks..	32.06	30.73	40.72
Average price of 20 representative railway bonds..	73.32	72.79	73.32

Dividends Declared

Boston & Albany.—$2.50, payable June 30 to holders of record May 31.

Cincinnati, New Orleans & Texas Pacific.—Preferred, $1.25, quarterly, payable June 1 to holders of record May 15.

Elmira & Williamsport.—7 Per Cent Preferred, $1.61, semi-annually, payable July 1 to holders of record June 20.

Joliet & Chicago.—Guaranteed Common, $1.75, quarterly, payable July 1 to holders of record June 20.

Union Pacific.—Common, $1.50, payable July 1 to holders of record June 1.

West Jersey & Seashore.—$1.50, semi-annually, payable July 1 to holders of record June 15.

Continued on next left-hand page

THERE IS NO LIMITATION TO STEAM LOCOMOTIVE PERFORMANCE

The modern steam locomotive is capable of handling any train speeds or train loads.

The limitation is usable speed consistent with safety under practical operating conditions.

Steam locomotives alone have the inherent flexibility that permits motive power units suitable for light weight high speed trains or heavier units capable of handling at any speed required the heavier trains for through line passenger or freight service.

LIMA LOCOMOTIVE WORKS INCORPORATED

LIMA LOCOMOTIVE WORKS INCORPORATED

LIMA **OHIO**

Railway Officers

EXECUTIVE

R. L. Page has been appointed assistant to the president of the Kansas City, Mexico & Orient, with headquarters at Mexico, D. F.

FINANCIAL, LEGAL AND ACCOUNTING

W. H. Anderson, who has been connected with the comptroller's office of the Chicago, Burlington & Quincy and the Colorado & Southern, with headquarters at Chicago, has been appointed treasurer and transfer agent of the latter company, with headquarters at Denver, Colo. Mr. Anderson succeeds **W. M. Holden,** who has been granted an indefinite leave of absence because of ill health.

Homer B. Fink, assistant treasurer of the Atchison, Topeka & Santa Fe, who has been promoted to secretary and treas-

Homer B. Fink

urer as noted in the *Railway Age* of May 4, was born on October 3, 1881, at Willard, Ohio. He entered railway service on September 1, 1899, as a clerk in the freight auditor's office of the Santa Fe, being transferred to the cashier's office in the treasury department on August 1, 1901. Five years later Mr. Fink was promoted to assistant cashier and in November, 1914, he was further advanced to paymaster. On August 1, 1916, he was again promoted to cashier and seven years later he was made assistant treasurer. Mr. Fink continued to hold the latter position until the time of his recent appointment, which was effective on May 1. Throughout his entire period of service with the Santa Fe, Mr. Fink has been located at Topeka.

TRAFFIC

F. W. Sedgwick, general agent for the Southern Pacific at Kansas City, Mo., has been appointed to the same position on the St. Louis Southwestern, with headquarters at Portland, Ore. Mr. Sedgwick succeeds to the territory formerly held by **P. B. Miller,** general agent at Seattle, Wash., who has resigned.

R. J. Sefton, general agent for the Chicago Great Western, at Dallas, Tex., has been transferred to St. Louis, Mo., succeeding **F. O. Mooney,** who in turn has been transferred to Dallas.

T. J. McRoberts, general passenger agent of the Wheeling & Lake Erie and the Lorain & West Virginia, has had his headquarters moved from Canton, Ohio, to Cleveland.

E. J. Meade, assistant general passenger agent on the Illinois Central, with headquarters at St. Louis, Mo., has been promoted to the newly-created position of general passenger agent, with headquarters at Memphis, Tenn.

H. A. B. Brown, traveling freight agent for the New York Central at San Francisco, Cal., has been appointed general agent, freight department, with the same headquarters, succeeding **W. W. Dickinson,** deceased.

Harold E. Hay, traveling passenger agent on the Pere Marquette, with headquarters at Detroit, Mich., has been appointed to the newly-created position of northwestern passenger agent, with headquarters at Milwaukee, Wis.

George R. Angell, assistant general freight agent on the Chicago, Rock Island & Gulf, has been promoted to general freight agent, with headquarters as before at Fort Worth, Tex. **T. W. Bowdry,** division passenger agent at Fort Worth, has been promoted to general passenger agent with the same headquarters. Mr. Angell and Mr. Bowdry succeed to the duties of the late **T. H. Wilhelm,** general freight and passenger agent at Fort Worth.

Mr. Angell was born in Houston, Tex., and entered railway service on November 1, 1896, as a messenger boy on the Texas & Pacific, remaining with that company in various capacities until June 18, 1907. He then entered the service of the Rock

George R. Angell

Island as a rate clerk in the general freight office at Fort Worth, being appointed chief clerk to the commercial agent at Dallas on December 15, 1908. On March 1, 1912, Mr. Angell was appointed commercial agent at Dallas, his title being changed to division freight agent some time later. On January 1, 1935, he was assigned to the position of assistant general freight agent at Fort Worth, which position he was holding at the time of his recent appointment.

OBITUARY

Edgar Van Court Reinhold, assistant purchasing agent of the New York Central, died on May 9 at his home in Scarsdale, N. Y. Mr. Reinhold was 48 years old.

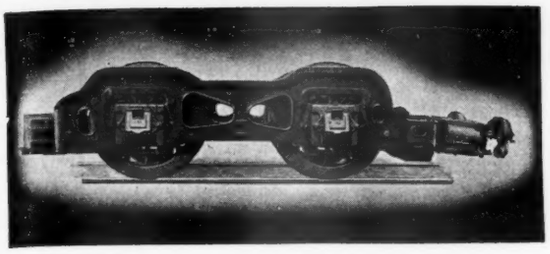
Charles F. Loweth, who retired on May 1 as chief engineer of the Chicago, Milwaukee, St. Paul & Pacific, at Chicago, died on May 15 at the Chicago Memorial Hospital; he was 78 years old. A photograph and biographical sketch of Mr. Loweth's railway career was published in *Railway Age* of May 4, in connection with his retirement from the position of chief engineer and his appointment as consulting engineer.

Owen Benjamin Huntsman, retired vice-president of the Texas & Pacific, died on May 10 in the New York Hospital, following an operation. Mr. Huntsman was 63 years old. He was born in Conyngham, Luzerne county, Pa., on September 23, 1871, and was graduated from State Normal School, West Chester, Pa., in 1892 and from Harvard College in 1897 with an A.B. degree, receiving an M.A. degree the following year. In 1898-99 he was a fellow in philosophy at Columbia University. Mr. Huntsman entered railway service in 1907 as vice-president of the Texas & Pacific, which position he held until 1915. From 1908 to 1915 he served also as vice-president of the Missouri Pacific and the St. Louis, Iron Mountain & Southern (now M. P.) and from 1913 to 1915 he was director of the Texas & Pacific. In 1914-15 he was director of the Missouri Pacific and the St. Louis, Iron Mountain & Southern and from 1915 to 1917 he served as assistant secretary and assistant treasurer of the latter roads. From 1917 to 1930 he served as vice-president, assistant secretary and assistant treasurer of the Missouri Pacific. In 1925 he was appointed assistant secretary of the New Orleans, Texas & Mexico and in 1929 he became also assistant treasurer of the latter road and assistant secretary and assistant treasurer of the International Great Northern. From 1929 to 1930 he served as vice-president, assistant secretary and assistant treasurer of the Missouri-Illinois at New York. Mr. Huntsman became, in 1921, vice-president of the Texas & Pacific, serving also as director from 1921 to 1924. He retired as vice-president of the Texas & Pacific in 1931.

John S. Lentz, consulting master car builder of the Lehigh Valley, who was for many years prominently identified with the affairs of the Master Car Builders' Association and its successor, the Mechanical

(*Continued on page 796*)

Tables of Revenues and Expenses of Railways begin on next left-hand page



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FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1935

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	General	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income	Net ry. operating income, 1934
Akron, Canton & Youngstown	March	171	$165,837	$37	$175,254	$16,991	$20,851	$9,218	$54,690	$12,287	$114,037	65.1	$61,217	$52,221	$35,136	$55,530
	3 mos.	171	501,126	89	525,984	45,129	51,236	24,731	165,287	33,409	319,792	60.8	206,192	179,125	131,291	115,839
Alton	March	949	819,172	134,018	1,124,672	129,498	180,314	41,951	454,067	43,548	866,127	77.0	258,545	188,193	30,305	38,469
	3 mos.	949	2,262,366	406,580	3,137,178	367,086	500,899	125,089	1,315,939	152,275	2,505,427	79.9	631,751	420,231	17,476	15,405
Atchison, Topeka & Santa Fe Sys.	March	13,307	8,410,032	951,169	10,340,589	1,322,273	2,551,599	379,968	3,862,823	640,254	8,774,079	84.9	1,566,510	688,121	623,275	1,084,698
	3 mos.	13,312	23,599,068	2,974,472	29,276,481	3,850,026	7,755,380	1,136,844	11,343,810	1,910,578	26,042,302	89.0	3,234,179	623,292	366,931	1,446,190
Atlanta & West Point	March	93	82,443	21,539	125,144	17,901	23,532	7,308	51,599	6,642	109,345	87.4	15,799	8,491	—3,946	1,112
	3 mos.	93	240,147	58,350	356,987	51,384	70,991	20,445	154,453	19,815	324,471	90.9	32,516	10,600	—24,588	—14,767
Western of Alabama	March	133	77,172	21,192	113,526	20,685	30,853	6,555	47,412	5,670	113,226	99.7	300	—7,795	—6,053	—5,070
	3 mos.	133	212,720	59,062	315,963	60,275	89,144	19,898	139,643	17,469	332,742	105.3	—16,779	—41,065	—31,534	1,409
Atlanta, Birmingham & Coast	March	639	248,509	6,928	286,267	39,159	45,542	20,123	105,511	20,976	241,316	84.1	44,951	31,988	9,354	—3,950
	3 mos.	639	633,785	18,801	741,173	119,686	135,854	63,242	298,179	63,340	711,980	96.1	29,193	—10,087	—57,096	—51,275
Atlantic Coast Line	March	5,147	3,048,901	849,552	4,450,853	432,089	723,016	111,381	1,521,697	138,736	2,991,274	67.2	1,459,579	859,387	776,133	1,160,226
	3 mos.	5,147	7,730,078	2,406,356	11,634,234	1,260,387	2,060,216	373,504	4,254,378	406,076	8,532,543	73.3	3,101,691	1,698,823	1,398,209	2,619,780
Charleston & Western Carolina	March	342	204,197	1,890	211,295	26,670	28,202	5,651	65,931	4,509	130,963	62.0	80,332	63,341	61,533	66,131
	3 mos.	342	506,497	4,023	524,805	77,152	78,257	17,143	176,787	13,549	362,888	69.1	161,917	111,926	110,133	149,346
Baltimore & Ohio	March	6,440	11,051,584	700,354	12,512,055	820,951	2,582,098	388,952	4,271,164	573,175	8,729,714	69.8	3,782,341	3,125,247	2,725,045	2,512,436
	3 mos.	6,440	29,957,059	2,205,628	34,268,430	2,421,415	7,087,118	1,048,992	12,403,345	1,681,654	24,926,165	72.7	9,342,265	7,349,322	6,328,483	5,160,929
Staten Island Rapid Transit	March	23	43,127	74,079	125,505	11,651	13,467	1,959	83,522	12,450	123,049	98.0	2,456	—14,144	—39,997	—12,146
	3 mos.	23	126,490	215,836	364,201	37,763	43,220	5,585	253,721	38,708	378,997	104.0	—14,796	—64,604	—151,778	—24,548
Bangor & Aroostook	March	603	609,469	42,720	675,603	95,787	96,212	5,151	153,134	30,435	381,515	56.5	294,088	238,116	225,181	249,825
	3 mos.	603	2,053,188	117,467	2,239,558	307,161	266,201	14,811	504,817	94,913	1,190,202	53.1	1,049,356	862,321	793,890	636,082
Bessemer & Lake Erie	March	225	566,303	841	579,152	68,294	263,766	11,493	142,384	45,828	531,727	91.8	47,425	26,085	58,222	—63,245
	3 mos.	225	1,363,017	2,522	1,396,272	147,591	778,113	34,453	388,293	135,345	1,483,746	106.3	—87,474	—150,326	—67,098	—317,281
Boston & Maine	March	2,038	2,528,893	525,023	3,579,859	351,186	607,873	65,590	1,497,957	172,564	2,710,190	75.7	869,669	682,163	502,998	722,977
	3 mos.	2,038	7,445,783	1,746,843	10,677,272	1,393,958	1,756,596	183,282	4,622,443	508,111	8,504,161	79.7	2,173,111	1,605,415	1,048,274	1,267,488
Brooklyn East District Term	March	10.91	77,038	.....	79,587	3,434	7,877	321	24,705	6,386	42,723	53.7	36,864	29,675	29,675	26,976
	3 mos.	10.91	230,114	.....	237,387	11,635	22,075	802	75,315	19,886	129,713	54.6	107,674	86,956	87,516	77,422
Burlington-Rock Island	March	280	51,971	3,413	59,855	12,368	13,659	4,031	44,128	9,228	83,414	139.4	—23,559	—30,186	—39,748	—18,157
	3 mos.	280	170,012	9,820	193,164	37,632	36,602	12,258	120,579	27,637	234,708	121.5	—41,544	—61,576	—87,624	—54,938
Cambria & Indiana	March	37	114,800	.....	114,945	4,837	39,082	357	13,114	6,191	63,581	55.31	51,364	31,292	109,522	104,777
	3 mos.	37	310,523	.....	310,962	15,437	115,218	1,059	37,693	18,624	188,031	60.46	122,931	68,449	293,694	285,959
Canadian Pac. Lines in Maine	March	233	193,734	17,260	224,291	23,006	50,780	8,655	81,536	6,625	171,337	76.4	52,954	46,944	22,253	78,616
	3 mos.	233	566,734	44,958	649,515	83,580	136,442	27,987	245,538	18,679	514,448	79.2	135,067	117,057	46,552	126,099
Candian Pac. Lines in Vermont	March	85	52,687	9,186	74,799	7,911	19,969	3,848	58,162	5,667	95,840	128.1	—21,041	—26,041	—43,089	—38,914
	3 mos.	85	150,419	28,820	216,215	29,412	62,330	12,510	174,679	15,759	295,596	136.7	—79,381	—94,381	—145,005	—126,799
Central of Georgia	March	1,926	1,022,677	115,201	1,314,756	153,002	276,605	51,247	517,669	99,885	1,106,172	84.1	208,584	134,901	84,116	127,799
	3 mos.	1,926	2,716,605	348,097	3,519,095	407,556	753,936	154,259	1,465,922	291,942	3,095,138	88.0	423,957	203,944	83,552	257,834
Central New Jersey	March	684	1,826,312	318,313	2,309,137	149,194	421,101	40,738	1,011,326	110,975	1,748,939	75.7	560,198	332,503	187,803	569,396
	3 mos.	685	5,617,861	966,697	7,030,202	471,585	1,430,611	122,801	3,095,951	379,069	5,546,450	78.9	1,483,752	877,177	476,557	1,733,767
Central Vermont	March	455	333,334	27,771	404,763	43,792	93,481	13,534	212,987	20,965	384,808	95.1	19,955	3,849	—10,036	14,703
	3 mos.	455	953,904	106,024	1,179,420	141,171	293,703	39,436	625,809	63,282	1,163,534	98.7	15,886	—32,076	—65,263	—8,749
Chesapeake & Ohio	March	3,113	9,510,847	192,131	10,012,357	999,265	1,797,067	193,193	2,169,247	289,396	5,461,758	54.6	4,550,599	3,687,391	3,681,402	3,805,905
	3 mos.	3,114	25,930,799	588,307	27,410,018	2,983,390	5,015,871	556,008	6,256,208	863,814	15,711,862	57.3	11,698,156	9,107,975	9,231,754	9,275,124
Chicago & Eastern Illinois	March	938	1,026,091	77,272	1,245,941	119,781	176,507	51,298	451,746	56,389	862,234	69.2	383,707	333,631	209,349	128,007
	3 mos.	938	2,826,856	246,230	3,463,126	366,268	540,287	153,761	1,336,755	167,060	2,583,324	74.6	879,802	679,569	313,499	50,082
Chicago & Illinois Midland	March	131	299,034	1,147	306,726	32,519	59,766	19,910	74,584	20,970	207,974	67.8	98,752	86,307	81,824	56,410
	3 mos.	131	868,269	3,261	890,060	94,587	182,290	51,886	227,219	64,351	620,558	69.7	269,502	233,101	237,153	195,436
Chicago & Northwestern	March	8,428	4,514,351	630,211	5,793,614	532,083	1,283,497	144,494	2,404,191	375,522	4,771,423	82.4	1,022,191	509,042	289,006	576,187
	3 mos.	8,428	12,633,527	1,985,758	16,500,536	1,531,507	3,673,568	459,229	7,176,481	1,108,925	14,045,387	85.1	2,455,149	918,638	179,562	1,164,676
Chicago, Burlington & Quincy	March	9,036	5,251,317	426,600	6,401,222	611,260	1,309,346	203,533	2,457,288	408,214	5,043,826	78.8	1,357,396	818,647	513,750	1,337,556
	3 mos.	9,036	14,666,985	1,391,127	18,080,328	1,653,168	3,882,026	570,729	7,223,650	1,212,831	14,712,768	81.4	3,367,560	1,750,871	881,051	3,060,761
Chicago Great Western	March	1,511	1,021,675	43,239	1,158,460	170,670	198,704	54,262	500,257	74,841	998,864	86.2	159,596	103,107	—51,467	97,447
	3 mos.	1,511	3,003,122	125,476	3,398,992	530,688	583,726	161,513	1,520,543	214,796	3,008,331	88.5	390,661	221,601	—267,692	55,339
Chicago, Indianapolis & Louisville	March	647	577,729	44,030	700,867	64,963	152,526	25,356	289,494	37,651	575,987	82.2	124,880	99,769	—1,011	—35,056
	3 mos.	647	1,563,167	124,527	1,903,819	158,774	431,349	73,452	839,876	117,214	1,638,844	86.1	264,975	189,946	—95,623	—98,652

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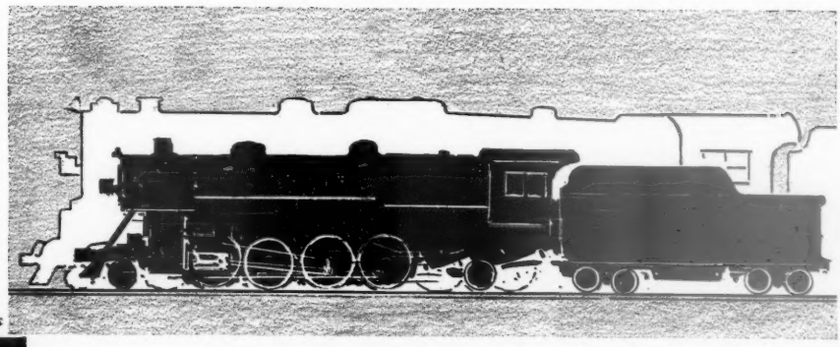

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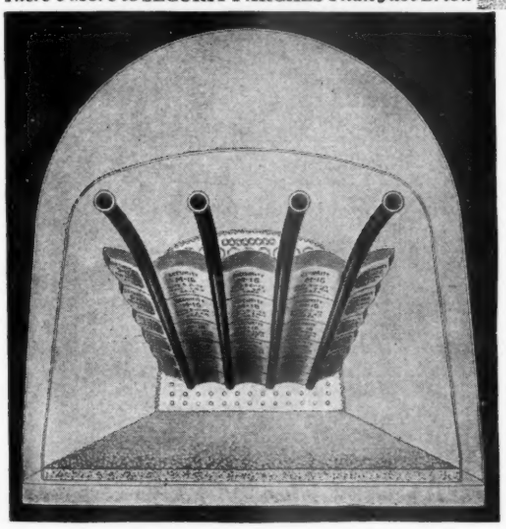

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Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1935—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	General	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income	Net ry. operating income, 1934
Chicago, Mil., St. Paul & Pacific	March	11,128	$6,107,713	$359,139	$7,174,169	$724,011	$1,395,962	$203,731	$2,914,851	$418,798	$5,684,703	79.2	$1,489,466	$944,894	$532,116	$862,867
	3 mos.	11,139	17,040,473	1,124,723	20,188,207	2,118,366	4,287,215	604,223	8,660,679	1,233,968	17,015,192	84.3	3,173,015	1,539,786	302,919	1,550,669
Chicago, Rock Island & Pacific	March	7,576	4,208,169	472,094	5,210,578	515,896	1,111,538	187,027	2,344,733	389,736	4,618,918	88.6	591,660	223,056	—63,947	209,917
	3 mos.	7,576	11,500,417	1,428,241	14,496,484	1,472,091	3,317,610	545,871	6,826,160	1,177,701	13,533,776	93.4	962,708	—153,654	—1,012,213	363,396
Chicago, Rock Island & Gulf	March	722	260,393	21,217	295,392	37,876	34,462	16,078	123,148	29,029	243,621	82.5	51,771	33,748	—34,021	—26,281
	3 mos.	722	769,378	69,229	868,530	114,089	91,332	48,771	350,433	83,869	693,987	79.9	174,543	120,735	—61,473	—54,533
Chic., St. Paul, Minn. & Omaha	March	1,654	900,613	124,932	1,108,323	101,488	157,609	30,386	578,073	84,986	965,691	87.1	142,632	68,641	—23,964	97,510
	3 mos.	1,654	2,683,627	369,227	3,296,633	331,213	452,478	88,684	1,808,897	256,648	2,968,887	90.1	327,746	104,886	—134,821	234,009
Clinchfield R. R.	March	309	464,807	3,535	473,693	37,372	105,919	15,905	94,276	12,132	265,604	56.1	208,089	170,086	194,886	296,915
	3 mos.	309	1,339,192	9,928	1,363,899	111,933	308,707	47,562	275,260	37,038	780,500	57.2	583,399	469,396	543,996	748,824
Colorado & Southern	March	1,019	379,670	19,738	446,944	100,741	102,946	12,327	189,084	43,026	449,055	100.5	—2,111	—57,034	—71,629	—16,108
	3 mos.	1,019	1,076,897	61,580	1,271,312	197,352	282,564	36,241	549,480	125,936	1,195,218	94.0	76,094	—88,056	—130,301	—50,220
Ft. Worth & Denver City	March	804	323,942	26,250	408,150	31,543	79,884	15,034	168,256	38,855	335,744	82.3	72,406	43,923	14,637	75,086
	3 mos.	804	887,550	87,754	1,146,430	98,802	227,565	46,816	464,818	116,145	961,387	83.9	185,043	97,585	13,950	234,664
Columbus & Greenville	March	167	61,501	5,717	72,604	16,682	12,356	3,224	32,159	9,638	74,051	102.0	—1,447	—4,220	—1,203	3,130
	3 mos.	167	166,628	17,131	199,197	46,378	38,528	10,062	94,849	28,530	218,339	109.6	—19,142	—28,336	—21,288	6,198
Delaware & Hudson	March	835	1,623,523	70,198	1,774,807	262,355	497,969	47,674	732,673	189,720	1,736,616	97.8	38,191	—49,773	—33,006	358,991
	3 mos.	835	5,173,634	260,142	5,665,024	798,604	1,559,405	141,743	2,290,104	553,302	5,362,788	94.7	302,236	38,318	116,380	811,520
Delaware, Lackawanna & Western	March	992	2,737,980	514,214	3,685,246	264,276	759,275	106,946	1,723,073	178,976	3,047,193	82.7	638,053	322,673	309,239	807,397
	3 mos.	992	8,228,715	1,576,251	10,984,920	762,186	2,288,761	322,919	5,219,767	486,301	9,126,494	83.1	1,858,426	841,057	830,184	1,184,954
Denver & Rio Grande Western	March	2,601	1,306,906	108,090	1,503,909	106,732	407,285	48,208	518,860	108,347	1,192,487	79.3	311,422	158,096	128,475	225,340
	3 mos.	2,612	3,815,439	252,283	4,323,510	297,032	1,076,056	147,362	1,532,689	319,707	3,386,317	78.3	937,193	473,424	368,057	611,632
Denver & Salt Lake	March	232	115,520	3,885	126,996	11,243	30,844	1,684	31,980	9,037	79,875	62.9	47,121	33,117	75,727	19,323
	3 mos.	232	385,314	11,516	424,418	31,382	85,694	4,890	100,638	28,992	239,466	56.4	184,952	142,948	263,395	79,978
Detroit & Mackinac	March	242	34,096	1,961	41,694	7,430	8,080	768	20,944	4,259	41,485	99.5	209	—2,075	—4,219	3,157
	3 mos.	242	94,899	7,605	117,401	21,113	23,268	2,571	62,769	12,320	122,052	104.0	—4,651	—11,589	—17,835	—10,838
Detroit & Toledo Shore Line	March	50	360,647	.....	363,446	18,907	25,916	7,074	85,613	9,490	147,000	40.5	216,446	184,891	120,944	146,473
	3 mos.	50	1,062,357	.....	1,070,660	52,329	75,151	21,014	249,632	28,145	426,303	39.8	644,357	546,418	367,830	359,871
Detroit, Toledo & Ironton	March	472	979,601	242	1,015,553	83,266	105,636	10,021	173,149	26,010	398,082	39.2	617,471	527,273	443,297	311,585
	3 mos.	472	2,735,566	908	2,840,061	228,662	302,662	32,096	496,927	76,638	1,131,034	39.8	1,709,027	1,469,047	1,252,794	779,795
Duluth, Missabe & Northern	March	560	59,195	5,509	82,239	94,910	160,697	2,798	123,663	48,799	430,865	523.9	—348,626	—369,869	—369,894	—469,086
	3 mos.	560	171,907	10,008	232,038	284,145	494,838	9,184	375,649	147,003	1,310,805	564.9	—1,078,767	—1,148,728	—1,148,223	—1,275,787
Duluth, Winnipeg & Pacific	March	178	79,659	2,499	84,325	15,250	13,941	1,702	38,953	3,925	73,771	87.5	10,554	6,334	—4,512	6,593
	3 mos.	178	232,218	6,085	245,378	46,360	45,961	5,054	122,909	11,586	231,870	94.5	13,508	1,212	—20,638	10,469
Elgin, Joliet & Eastern	March	446	1,178,112	.....	1,289,324	94,479	252,689	13,174	428,658	65,305	854,286	66.3	435,038	319,968	295,175	206,039
	3 mos.	446	3,236,641	4	3,559,732	257,243	710,831	39,152	1,243,535	188,797	2,439,539	68.5	1,120,193	850,361	763,068	134,286
Erie (incl. Chicago & Erie)	March	2,304	5,233,486	380,155	6,097,016	443,640	1,223,873	157,191	2,312,327	295,001	4,439,420	72.8	1,657,596	1,322,082	1,104,249	1,892,932
	3 mos.	2,304	15,245,399	1,166,602	17,742,393	1,301,621	3,600,217	482,227	6,851,833	867,793	13,123,474	74.0	4,618,919	3,613,409	2,888,883	3,879,691
New Jersey & New York	March	45	12,019	49,299	63,216	5,056	20,826	1,036	49,209	3,404	79,531	125.8	—16,315	—20,473	—36,962	—34,350
	3 mos.	45	42,666	147,758	195,531	15,395	73,481	3,537	146,224	9,230	247,867	126.8	—52,336	—64,795	—113,238	—102,697
N. Y., Susquehanna & Western	March	215	253,181	24,794	295,191	23,956	54,109	4,708	122,469	12,710	217,952	73.8	77,239	54,809	14,400	94,651
	3 mos.	215	826,568	73,891	953,438	68,385	173,420	14,115	401,549	37,599	695,068	72.9	258,370	189,976	75,103	192,386
Florida East Coast	March	811	575,510	376,030	1,088,770	131,811	144,347	22,763	337,337	55,579	718,690	66.0	370,080	294,999	234,182	426,393
	3 mos.	811	1,394,543	1,030,673	2,806,678	386,477	415,527	68,593	914,735	162,471	2,011,683	71.7	794,995	569,700	431,223	915,193
Fort Smith & Western	March	249	44,533	840	48,555	13,825	9,134	5,096	18,637	3,853	50,695	104.4	—2,140	—3,825	—8,684	—6,079
	3 mos.	249	155,969	2,308	168,717	42,741	29,467	15,964	56,767	11,703	157,090	93.1	11,627	5,942	—9,069	—2,841
Georgia R. R.	March	329	233,345	11,839	271,430	26,093	50,645	16,402	113,969	11,643	219,085	80.7	52,345	46,960	55,234	50,312
	3 mos.	329	638,275	34,201	742,027	71,719	152,964	48,822	333,870	35,248	643,676	86.8	98,351	82,284	112,687	139,758
Georgia & Florida	March	408	104,946	1,931	111,214	21,273	15,122	7,701	34,467	7,690	86,231	77.5	24,983	20,389	19,732	11,294
	3 mos.	408	238,678	5,398	255,623	53,929	45,481	22,777	96,521	22,449	241,135	106.0	14,488	718	—4,230	—1,900
Grand Trunk Western	March	1,006	1,612,744	53,713	1,784,114	166,884	352,768	31,834	715,652	82,888	1,353,398	75.9	430,716	354,000	230,303	322,247
	3 mos.	1,006	4,385,602	179,795	4,896,380	468,290	1,044,550	94,217	2,082,320	242,529	3,942,002	80.5	954,378	723,880	335,242	363,111
Canadian Nat'l Lines in New Eng.	March	172	80,994	5,039	92,217	18,732	17,768	2,469	57,190	8,701	105,481	114.4	—13,264	—24,563	—59,450	—28,015
	3 mos.	172	243,275	16,426	282,658	62,502	59,209	7,256	181,641	26,451	339,135	120.0	—56,477	—90,373	—200,410	—190,113
Great Northern	March	8,282	4,324,448	280,662	5,060,620	383,803	1,065,495	158,569	1,983,238	288,408	3,928,098	77.6	1,132,522	567,090	410,807	638,005
	3 mos.	8,312	11,709,356	863,267	13,825,973	1,275,448	2,925,424	457,666	5,941,944	851,289	11,573,235	83.7	2,252,738	593,118	125,966	578,471
Green Bay & Western	March	234	120,630	973	126,035	24,488	14,848	3,442	43,853	5,411	92,042	73.0	33,993	27,492	23,974	3,664
	3 mos.	234	328,885	3,241	343,661	63,821	44,404	14,792	135,669	16,513	275,199	80.0	68,462	50,882	44,126	3,032
Gulf & Ship Island	March	259	93,984	11,068	130,259	20,139	22,407	2,929	59,566	4,191	110,274	84.7	19,985	5,540	—4,279	9,369
	3 mos.	259	230,051	23,855	307,919	47,287	49,499	9,281	155,986	15,632	279,491	90.8	28,428	—14,467	—38,200	—16,683

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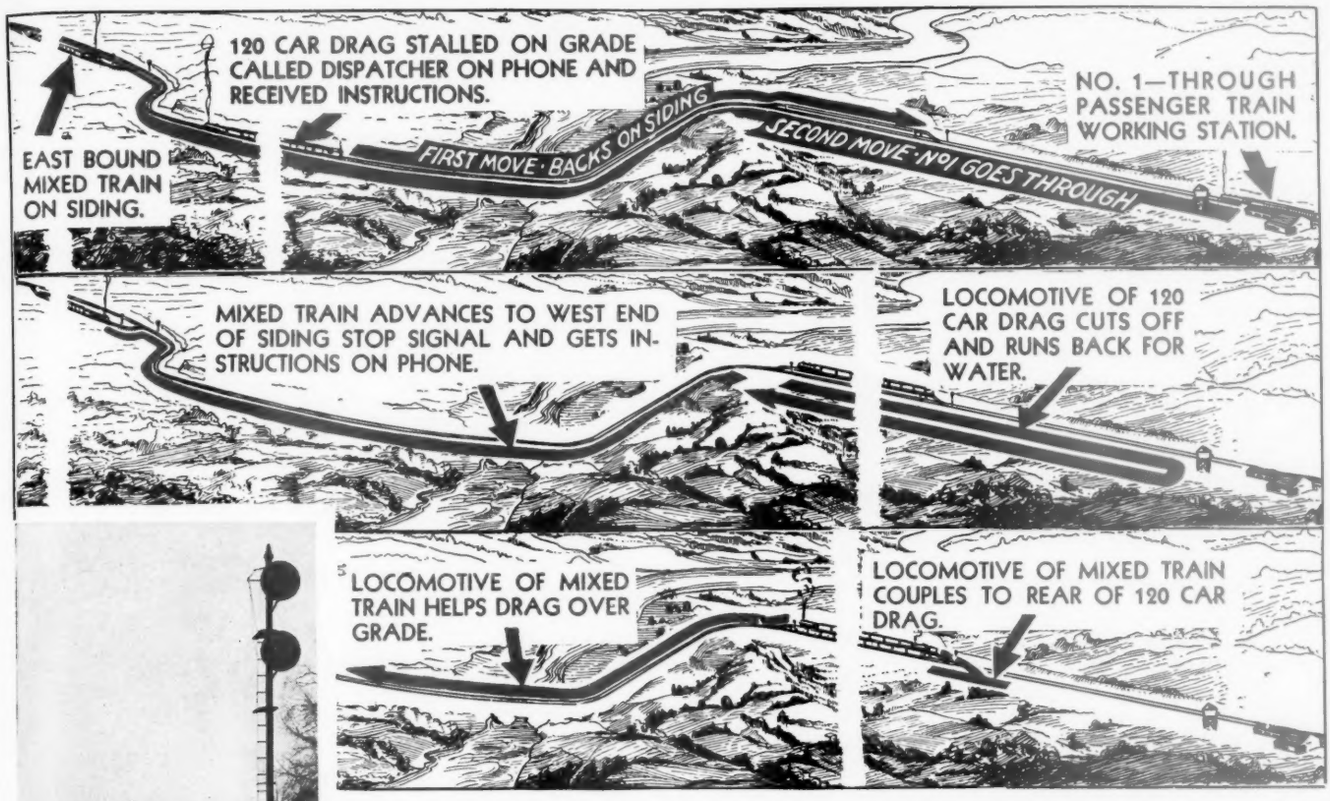
120 CAR DRAG STALLED ON GRADE CALLED DISPATCHER ON PHONE AND RECEIVED INSTRUCTIONS.
EAST BOUND MIXED TRAIN ON SIDING.
FIRST MOVE · BACKS ON SIDING
SECOND MOVE · No 1 GOES THROUGH
NO. 1—THROUGH PASSENGER TRAIN WORKING STATION.
MIXED TRAIN ADVANCES TO WEST END OF SIDING STOP SIGNAL AND GETS INSTRUCTIONS ON PHONE.
LOCOMOTIVE OF 120 CAR DRAG CUTS OFF AND RUNS BACK FOR WATER.
LOCOMOTIVE OF MIXED TRAIN HELPS DRAG OVER GRADE.
LOCOMOTIVE OF MIXED TRAIN COUPLES TO REAR OF 120 CAR DRAG.

What Delay Would have Occurred with Written Train Orders

Could No. 1 be cleared with a delay not exceeding three minutes if all the trains involved were operated under the written train order system? Here is what happened under C. T. C.

The dispatcher permitted the 120-car westbound freight, stalled on the grade, to back into the nearest siding under signal protection provided by the "Union" C. T. C. installation so that No. 1 could pass. The freight engine was then cut off for a run to the next station to the rear for water. In the meantime, the dispatcher permitted the eastbound mixed train to proceed to the stop signal at the west end of the next passing siding, holding it there until the freight engine returned for its train. The mixed train then moved up to the east end of the passing siding where its cars were left on the main while its engine helped the freight up the hill. Delay to No. 1, approximately 3 minutes.

"Union" Centralized Traffic Control Installations begin paying dividends immediately.

C.T.C.

934

1881 **Union Switch & Signal Co.** 1935

SWISSVALE, PA.

NEW YORK MONTREAL CHICAGO ST. LOUIS SAN FRANCISCO

Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1935—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	General	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income	Net ry. operating income, 1934
Gulf, Mobile and Northern	March	936	$434,696	$22,150	$479,664	$56,834	$74,620	$28,840	$142,143	$32,066	$334,704	69.78	$144,960	$114,575	$67,130	$72,728
	3 mos.	936	1,184,904	54,132	1,297,654	167,251	218,194	90,929	424,423	95,792	997,190	76.85	300,464	209,858	80,882	116,476
Illinois Central	March	4,980	6,053,426	691,072	7,304,839	553,280	1,698,218	193,523	2,753,453	343,149	5,589,164	76.5	1,715,675	1,246,163	1,100,435	1,396,378
	3 mos.	4,980	16,993,297	2,084,588	20,619,991	1,624,269	4,909,610	615,027	8,060,935	996,484	16,347,258	79.3	4,272,733	2,918,124	2,726,729	3,350,533
Yazoo & Mississippi Valley	March	1,635	875,828	62,379	1,005,680	73,773	195,621	28,949	420,570	49,404	769,669	76.5	236,011	119,364	59,388	40,032
	3 mos.	1,635	2,316,347	173,006	2,695,158	234,933	546,261	91,803	1,213,926	149,589	2,238,254	83.0	456,904	107,039	—95,744	101,349
Illinois Central System	March	6,616	6,929,254	753,451	8,310,519	627,053	1,893,839	222,472	3,174,023	392,553	6,358,833	76.5	1,951,686	1,362,009	1,166,611	1,446,442
	3 mos.	6,616	19,309,644	2,257,594	23,315,149	1,859,202	5,455,871	706,830	9,274,861	1,146,073	18,585,512	79.7	4,729,637	3,016,127	2,654,560	3,481,248
Illinois Terminal	March	525	349,475	62,268	446,810	36,635	68,594	14,430	148,406	23,596	293,304	65.64	153,506	127,766	109,982	90,042
	3 mos.	525	965,822	176,502	1,246,192	109,497	194,921	44,046	448,651	67,829	969,741	69.79	376,451	299,202	248,782	212,037
Kansas City Southern	March	878	695,613	16,894	808,979	77,043	137,165	47,599	259,794	87,469	610,790	75.5	198,189	138,005	102,200	133,605
	3 mos.	878	1,937,708	49,077	2,255,603	219,641	413,899	143,938	774,268	251,094	1,806,535	80.1	449,068	258,157	166,423	299,253
Kansas, Oklahoma & Gulf	March	326	152,996	365	155,885	18,060	18,499	7,786	40,082	10,122	93,762	60.1	62,123	49,669	33,260	52,931
	3 mos.	326	456,867	1,138	465,304	33,516	58,906	22,233	112,107	29,272	254,786	54.8	210,518	172,650	128,043	153,236
Lake Superior & Ishpeming	March	160	32,920	108	34,680	17,726	25,137	530	19,598	7,264	70,255	202.6	—35,575	—48,797	—50,344	—43,442
	3 mos.	160	96,678	348	101,726	55,669	75,279	1,832	59,855	22,025	214,660	211.0	—112,934	—152,602	—157,889	—142,319
Lehigh & Hudson River	March	96	120,908	108	121,874	9,343	22,959	3,297	42,204	9,220	87,023	71.4	34,851	23,917	11,173	27,676
	3 mos.	96	371,285	371	378,094	29,680	64,460	9,596	129,852	28,060	261,648	69.2	116,446	82,175	44,330	52,274
Lehigh & New England	March	220	237,804	299	239,912	26,842	62,658	5,259	97,962	21,376	214,097	89.2	25,815	20,201	28,497	88,720
	3 mos.	220	785,002	859	790,847	84,582	176,683	16,238	301,360	60,550	639,412	80.9	151,435	123,909	150,400	287,877
Lehigh Valley	March	1,354	2,654,966	176,160	3,051,370	187,105	630,613	109,434	1,507,250	137,962	2,587,023	84.8	464,347	264,891	111,028	894,173
	3 mos.	1,354	8,752,783	577,582	9,996,420	564,477	1,855,551	325,528	4,623,360	405,098	7,818,753	78.2	2,177,667	1,631,657	1,147,702	2,159,300
Louisiana & Arkansas	March	608	338,318	8,987	371,648	46,865	72,677	23,378	93,962	23,622	261,269	70.3	110,379	77,758	67,155	78,877
	3 mos.	608	940,028	24,857	1,036,251	129,398	191,201	69,447	269,187	71,143	728,750	70.3	307,501	209,075	183,412	236,816
Louisiana, Arkansas & Texas	March	255	72,729	248	74,276	20,298	9,197	4,149	25,649	5,996	65,289	87.9	8,987	8,034	—3,282	5,354
	3 mos.	255	212,088	668	218,767	57,201	26,849	13,953	76,422	17,257	191,682	87.1	27,085	21,105	—13,353	7,658
Louisville & Nashville	March	5,051	5,194,274	463,108	6,184,240	639,918	1,357,311	163,735	2,270,302	277,910	4,755,671	76.9	1,428,569	1,096,739	1,111,162	1,625,941
	3 mos.	5,051	15,222,786	1,429,694	18,117,002	1,948,561	4,045,149	519,026	6,633,643	827,362	14,103,102	77.8	4,013,900	3,018,206	3,110,393	4,405,305
Maine Central	March	1,046	837,246	66,426	988,681	135,583	180,974	12,929	371,566	37,413	738,465	74.7	250,216	201,828	123,219	137,118
	3 mos.	1,046	2,501,411	238,029	2,983,580	500,925	505,449	30,910	1,209,888	113,608	2,360,752	79.1	622,828	477,166	258,942	179,154
Midland Valley	March	361	84,111	14	86,051	15,577	14,705	2,550	26,285	8,061	67,098	78.0	18,953	11,479	2,736	22,801
	3 mos.	361	300,200	25	306,016	34,361	31,618	7,254	84,411	23,731	181,162	59.2	124,854	102,406	72,796	80,746
Minneapolis & St. Louis	March	1,647	524,604	13,956	574,968	55,224	125,161	27,744	296,584	38,477	542,699	94.4	32,269	9,961	—4,767	34,385
	3 mos.	1,647	1,456,766	40,342	1,606,769	145,987	370,836	77,014	901,834	117,584	1,611,888	100.3	—5,119	—71,531	—141,807	12,772
Minn., St. Paul & S. S. Marie	March	4,297	1,458,248	73,084	1,671,645	227,953	377,027	56,010	798,121	146,424	1,608,167	96.2	63,478	—68,027	—204,466	—111,918
	3 mos.	4,297	3,939,031	206,245	4,534,924	706,757	1,020,091	167,278	2,413,534	427,191	4,744,164	104.6	—209,240	—538,815	—864,935	—458,815
Duluth, South Shore & Atlantic	March	556	146,182	10,213	166,907	24,551	32,847	4,183	74,069	9,223	144,743	86.7	22,164	13,156	5,394	—6,261
	3 mos.	556	382,919	28,836	444,208	74,711	95,056	13,221	226,328	27,534	436,356	98.2	7,852	—20,921	—45,939	—74,055
Spokane International	March	163	30,081	1,911	37,699	7,050	6,539	1,669	18,355	5,140	38,713	102.7	—1,014	—3,924	—6,119	—6,903
	3 mos.	163	84,892	6,334	106,407	20,535	17,759	5,315	55,906	15,768	115,243	108.3	—8,836	—17,557	—23,985	—25,572
Mississippi Central	March	150	55,513	1,455	58,990	8,188	10,668	6,668	18,862	6,300	50,686	85.9	8,304	5,460	—105	6,550
	3 mos.	150	145,171	4,416	155,426	22,522	32,801	20,372	53,387	19,792	148,874	95.8	6,552	—1,867	—11,999	3,063
Missouri & North Arkansas	March	364	70,135	845	77,143	19,927	9,643	3,587	30,820	7,980	71,957	93.3	5,186	3,550	—8,433	—865
	3 mos.	364	187,484	2,854	208,193	50,453	26,006	10,942	82,244	20,151	189,796	91.2	18,397	13,591	—15,147	—4,109
Missouri-Illinois	March	208	87,418	690	89,746	15,842	12,402	2,700	29,032	7,244	67,174	74.8	22,572	16,661	6,279	14,952
	3 mos.	208	238,294	2,052	245,600	42,330	34,181	8,134	84,570	20,692	189,205	77.0	56,395	39,284	14,843	27,444
Missouri-Kansas-Texas Lines	March	3,293	1,665,219	149,806	2,062,840	272,119	354,686	105,970	792,168	156,808	1,696,108	82.2	366,732	200,642	29,609	—27,225
	3 mos.	3,293	4,647,231	446,856	5,789,171	795,944	1,238,396	318,219	2,346,162	459,780	5,204,832	89.9	584,339	81,899	—443,866	7,023
Missouri Pacific	March	7,235	5,031,288	296,895	5,906,251	936,127	1,263,924	213,235	2,311,406	387,752	5,162,145	87.4	744,106	419,359	104,269	854,590
	3 mos.	7,235	14,535,614	938,130	17,090,761	2,276,826	3,738,171	661,476	6,771,426	1,121,708	14,674,739	85.9	2,416,022	1,438,047	378,268	1,970,873
Gulf Coast Lines	March	1,763	729,674	30,376	823,106	137,820	158,759	41,985	278,350	66,782	684,579	83.17	138,527	86,804	1,512	173,916
	3 mos.	1,763	2,450,705	92,851	2,735,629	358,279	455,755	126,733	824,574	191,618	1,958,711	71.60	776,918	631,145	313,055	495,363
International-Great Northern	March	1,154	762,602	51,908	932,013	145,852	171,456	27,646	378,184	65,045	800,077	85.84	131,936	96,358	5,530	201,123
	3 mos.	1,154	2,333,565	165,867	2,847,960	400,553	512,973	84,877	1,129,622	190,471	2,354,340	62.67	493,620	389,172	93,656	380,679
San Antonio, Uvalde & Gulf	March	316	77,143	2,290	87,664	18,093	11,173	4,475	30,430	6,813	70,984	81.0	16,680	12,913	—5,980	30,241
	3 mos.	316	192,627	7,864	225,506	50,665	31,558	13,549	87,015	18,992	201,267	89.3	24,239	13,168	—47,797	63,747
Mobile & Ohio	March	1,201	615,802	22,466	687,909	93,338	146,063	37,524	294,958	56,603	630,044	91.6	57,865	25,929	—33,526	22,315
	3 mos.	1,201	1,734,058	67,938	1,933,654	307,447	403,637	110,445	838,155	164,871	1,828,021	94.5	105,633	9,267	—161,513	27,986
Monongahela	March	174	429,944	1,085	432,914	28,025	37,722	406	81,773	7,102	155,028	35.8	277,886	259,796	165,985	218,119
	3 mos.	174	1,084,028	2,678	1,094,422	79,245	92,862	1,274	240,305	20,382	433,852	39.6	660,570	606,316	343,886	463,134

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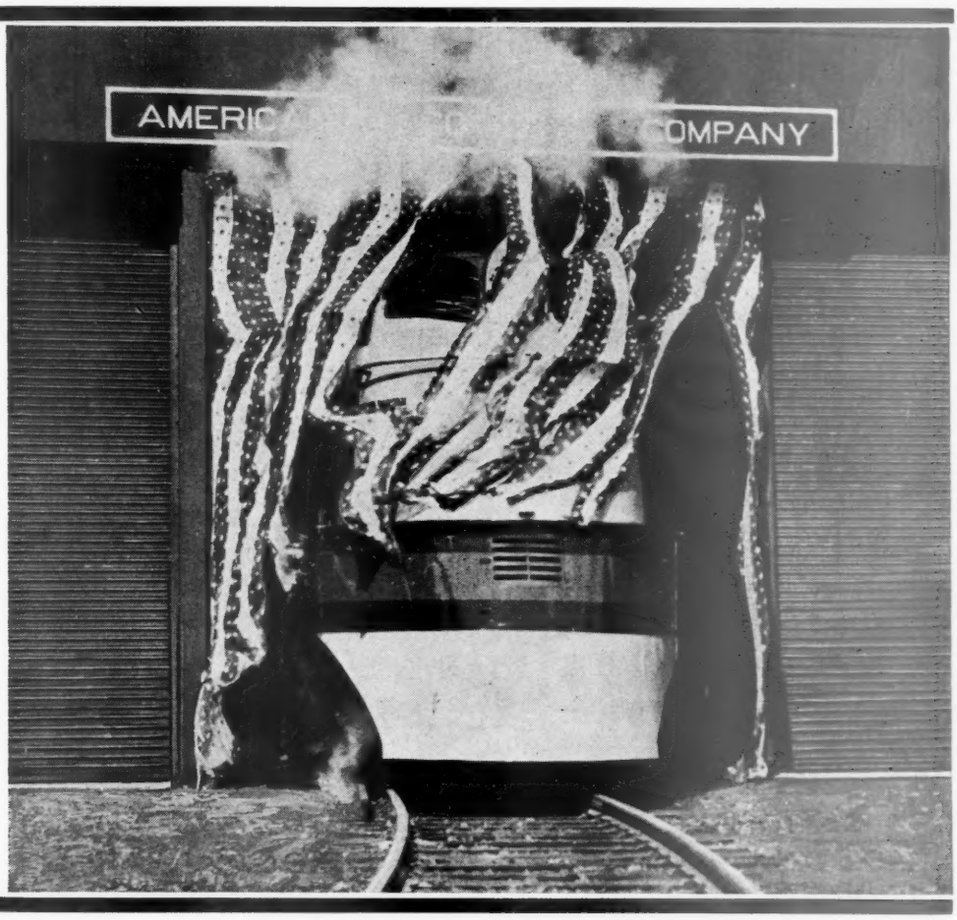
BREAKING THROUGH!



April 30, 1935

At 3 P. M. at Schenectady, N. Y., steam again broke through into a new era in railway passenger traffic.

AMERICAN LOCOMOTIVE COMPANY

ALCO

30 CHURCH STREET · NEW YORK · N.Y.

Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1935—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	General	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income	Net ry. operating income, 1934
Montour	March	57	$176,805	.....	$177,479	$10,679	$33,783	$820	$43,216	$6,461	$94,959	53.5	$82,520	$66,281	$79,174	$77,722
	3 mos.	57	449,638	.....	452,517	27,917	97,477	2,665	116,714	19,025	263,798	58.3	188,719	146,648	193,977	153,872
Nashville, Chattanooga & St. Louis	March	1,191	876,992	$70,021	1,077,630	138,895	268,856	55,645	434,437	57,591	961,432	89.2	116,198	80,843	58,985	177,306
	3 mos.	1,191	2,411,213	254,255	3,043,970	384,983	759,002	177,399	1,271,446	168,308	2,778,916	91.3	265,054	158,360	68,976	459,107
Nevada Northern	March	165	29,916	803	35,265	8,893	3,015	704	8,455	4,388	25,455	72.2	9,810	3,051	6,803	—487
	3 mos.	165	72,367	2,562	88,138	26,500	9,218	2,010	24,348	12,892	74,968	85.1	13,170	—6,768	4,913	194
New York Central	March	11,392	18,541,686	4,262,969	25,739,611	2,192,971	5,805,106	518,302	9,686,310	1,028,752	19,572,086	76.0	6,167,525	4,502,872	3,560,938	4,391,084
	3 mos.	11,392	53,396,709	13,511,221	75,284,771	6,666,829	6,209,503	1,522,309	29,074,423	3,047,004	57,632,123	76.6	17,652,648	11,754,330	8,126,346	8,211,194
Pittsburgh & Lake Erie	March	233	1,276,283	46,375	1,375,802	94,983	446,595	26,394	475,984	68,983	1,121,403	81.5	254,399	151,980	290,306	361,426
	3 mos.	233	3,554,839	141,162	3,827,368	263,050	1,210,304	77,328	1,354,956	199,940	3,128,999	81.8	698,369	394,086	840,486	760,833
New York, Chicago & St. Louis	March	1,691	2,902,170	52,240	3,048,900	296,639	427,261	104,472	1,008,588	123,785	1,959,112	64.3	1,089,788	947,619	694,065	750,891
	3 mos.	1,691	8,074,824	168,967	8,518,135	705,554	1,266,792	311,046	2,993,944	368,268	5,650,581	66.3	2,867,554	2,437,633	1,696,955	1,875,812
N. Y., New Haven & Hartford	March	2,068	3,285,108	1,742,190	5,731,262	577,257	931,358	73,431	2,319,574	224,455	4,271,650	74.5	1,459,612	1,109,175	627,683	873,639
	3 mos.	2,068	9,643,753	5,450,379	17,095,828	1,887,981	2,662,736	216,068	6,847,203	675,172	12,737,351	74.5	4,358,477	3,307,265	1,764,581	1,761,467
New York Connecting	March	20	245,940	.....	257,308	9,525	7,536	.....	42,433	1,007	60,501	23.5	196,807	162,807	123,549	158,531
	3 mos.	20	699,962	.....	726,061	39,344	19,246	.....	101,229	3,099	162,918	22.4	563,143	460,643	364,956	410,293
New York, Ontario & Western	March	567	438,727	3,888	496,957	62,702	118,527	13,113	270,424	26,612	492,110	99.0	4,847	—32,249	—63,414	136,693
	3 mos.	567	1,912,699	20,897	2,109,387	184,178	387,383	33,407	974,573	75,284	1,665,990	79.0	443,397	328,694	186,776	397,141
Norfolk & Western	March	2,168	6,170,655	132,692	6,539,687	751,745	1,256,506	114,564	1,547,788	297,847	3,979,259	60.8	2,560,428	1,872,188	2,063,617	2,297,764
	3 mos.	2,172	17,370,951	391,236	18,384,177	2,163,430	3,718,198	337,943	4,455,889	886,629	11,594,937	63.1	6,789,240	4,724,369	5,209,122	5,676,259
Norfolk Southern	March	932	384,997	7,561	414,601	70,523	52,088	19,780	147,726	29,723	319,840	77.1	94,761	68,334	37,838	40,406
	3 mos.	932	1,006,328	23,849	1,088,520	191,806	155,561	61,649	420,755	89,194	918,965	84.4	169,555	92,308	18,008	53,355
Northern Pacific	March	6,722	3,424,740	214,770	4,013,334	405,450	976,556	149,817	1,663,665	357,196	3,610,986	90.0	402,348	—38,121	285,809	774,711
	3 mos.	6,722	9,098,261	682,014	10,885,758	1,171,783	2,864,075	423,076	5,000,687	1,053,605	10,689,021	98.2	196,737	—1,119,693	—177,885	1,037,745
Northwestern Pacific	March	375	136,239	64,872	232,120	34,668	48,178	3,754	144,805	14,090	245,375	105.7	—13,255	—28,754	—37,661	—10,214
	3 mos.	375	359,452	190,803	638,818	101,186	150,823	11,237	417,386	42,554	722,382	113.1	—83,564	—129,540	—152,623	—95,782
Oklahoma City-Ada-Atoka	March	132	32,568	273	34,860	9,609	1,092	740	10,951	2,328	24,720	70.9	10,140	8,963	2,049	1,821
	3 mos.	132	102,705	903	110,028	22,051	2,999	2,279	32,087	6,323	65,739	59.7	44,289	37,838	16,461	—50
Pennsylvania Railroad	March	10,481	23,223,785	4,844,900	30,901,463	2,314,010	6,124,137	564,272	11,175,828	1,991,235	22,542,252	72.9	8,359,211	6,221,786	5,547,647	6,094,557
	3 mos.	10,481	64,839,004	15,125,411	87,932,518	7,126,477	17,593,755	1,733,320	32,827,658	5,953,442	66,370,907	75.5	21,561,611	16,058,668	13,955,908	15,144,474
Long Island	March	396	452,479	1,248,822	1,801,974	152,631	392,253	12,653	933,534	84,964	1,576,030	87.5	225,944	81,690	—92,694	154,084
	3 mos.	396	1,411,044	3,700,658	5,381,004	653,446	1,047,659	36,550	2,819,664	265,881	4,823,194	89.6	557,810	165,164	—341,903	295,383
Pennsylvania-Reading Seashore Lns.	March	413	215,385	135,420	372,439	56,007	97,301	6,923	264,062	34,561	459,328	123.3	—86,889	—156,461	—224,811	—192,399
	3 mos.	413	682,225	336,640	1,080,144	212,380	275,000	20,389	800,178	106,541	1,416,957	131.2	—336,813	—535,900	—732,757	—592,924
Pere Marquette	March	2,129	2,244,564	46,311	2,389,582	229,440	503,332	62,780	872,387	89,394	1,761,197	73.7	628,385	520,268	386,319	551,834
	3 mos.	2,129	6,415,257	161,009	6,860,819	658,643	1,461,753	181,910	2,546,070	265,780	5,124,878	74.7	1,735,941	1,413,985	1,121,875	1,174,794
Pittsburgh & Shawmut	March	101	92,425	558	93,628	11,008	19,067	1,431	26,903	4,993	63,402	67.7	30,226	30,304	28,805	38,399
	3 mos.	101	212,618	1,641	216,532	31,055	56,851	4,185	66,663	14,858	173,612	80.2	42,920	41,810	47,062	73,996
Pittsburgh & West Virginia	March	138	265,354	.....	277,164	26,552	62,065	13,581	56,967	17,631	186,724	67.4	90,440	69,592	98,090	121,618
	3 mos.	138	718,099	.....	753,839	62,936	172,219	38,636	159,932	50,564	514,989	68.3	238,850	185,046	258,280	257,867
Pittsburgh, Shawmut & Northern	March	190	103,093	142	104,931	14,429	18,891	1,386	39,209	8,058	81,973	78.1	22,958	20,800	13,648	16,651
	3 mos.	190	253,632	465	258,999	38,741	56,626	3,885	105,186	24,764	229,202	88.5	29,797	23,309	3,500	34,097
Reading	March	1,459	3,632,633	241,721	4,094,563	295,156	824,023	71,369	1,653,657	200,283	3,054,495	74.6	1,040,068	783,782	829,901	1,704,537
	3 mos.	1,460	11,598,935	783,343	13,090,654	931,318	2,568,364	218,556	5,190,804	688,613	9,643,374	73.7	3,447,280	2,626,886	2,690,578	4,291,806
Richmond, Fredericksb'g & Potomac	March	117	326,429	207,437	678,089	50,800	114,499	8,886	257,458	46,659	495,815	73.1	182,274	146,382	92,613	106,727
	3 mos.	117	797,130	594,484	1,770,058	145,823	358,638	25,782	724,181	136,232	1,436,711	81.2	333,347	248,952	135,224	203,333
Rutland	March	407	170,626	25,936	249,639	39,987	59,700	11,938	134,080	14,701	260,406	104.3	—10,767	—30,756	—28,074	—4,933
	3 mos.	407	489,571	99,642	740,107	118,294	172,928	32,450	408,338	42,974	774,470	104.6	—34,363	—93,107	—80,099	—39,416
St. Louis-San Francisco	March	5,042	2,579,205	185,528	3,076,813	574,889	798,427	91,469	1,221,319	232,345	2,931,248	95.3	145,565	—96,927	—95,532	380,035
	3 mos.	5,046	7,498,398	586,825	8,957,595	1,583,874	2,307,641	278,574	3,604,974	653,038	8,457,686	94.4	499,909	—224,931	—217,799	1,087,153
Ft. Worth & Rio Grande	March	233	23,159	1,034	31,279	11,403	9,414	2,353	21,935	4,738	49,843	159.3	—18,564	—22,602	—26,945	—26,093
	3 mos.	233	66,807	3,356	89,319	32,755	26,556	7,651	66,973	14,618	148,537	166.3	—59,218	—71,257	—84,906	—74,651
St. Louis, San Francisco & Texas	March	261	64,076	313	67,551	26,536	15,265	4,792	37,261	9,327	93,181	137.9	—25,630	—29,379	—49,031	—43,652
	3 mos.	261	183,735	1,149	195,200	79,200	43,680	13,745	107,802	26,590	271,010	138.8	—75,810	—87,025	—155,174	—116,911
St. Louis Southwestern Lines	March	1,786	1,318,118	15,046	1,385,629	145,983	180,061	71,904	426,061	59,161	888,992	64.2	496,637	429,521	305,769	170,550
	3 mos.	1,786	3,644,760	45,053	3,846,396	402,697	527,896	212,980	1,246,665	176,807	2,585,048	67.2	1,261,348	1,052,211	694,814	354,760
San Diego & Arizona Eastern	March	155	27,061	5,788	34,678	9,990	8,375	1,833	20,398	4,203	45,388	129.7	—10,390	—15,227	—13,449	2,538
	3 mos.	155	92,778	14,137	110,965	30,843	24,409	5,939	56,422	13,330	132,688	119.6	—21,723	—31,390	—28,641	10,440
Seaboard Air Line	March	4,307	2,737,339	369,438	3,499,647	440,292	604,599	141,154	1,190,310	201,381	2,624,202	75.0	875,445	623,633	481,789	454,762
	3 mos.	4,307	6,998,930	1,172,866	9,191,334	1,248,254	1,752,536	416,938	3,356,670	587,260	7,497,226	81.5	1,694,108	950,489	609,581	1,210,216

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Specialization

HAZARDS to deep sea divers are many, violent, and sometimes fatal — high water pressures . . . tugging tides and currents . . . sudden savage lunges by sharks and other dangerous fish . . . entanglements or breaking of the air line . . . failure of the air pump or diving helmet. All these hazards can be overcome only by the skilled diver with reliable equipment, correctly designed. But there has to be that combination or the result will be disaster.

Likewise the hazards in the operation of superheater equipment are continuous and violent.

Almost from the moment the locomotive firebox is warmed up until the boiler is cold, the superheater units are subjected internally to high steam pressures and temperatures, which, when the engine is operating, are at high velocities, and there is an occasional carrying over of slugs of water. Externally they are blasted with hot gases and cinders on their way out the stack. After many years of service under such conditions, naturally in time they become worn.

Then, if the locomotive is to continue giving the service for which it was designed, the superheater units must be restored to their original condition. This is possible only by having them factory-rebuilt by the Elesco unit REmanufacturing service . . . a highly specialized service requiring special machines operated by skilled workmen. It is the same process used in the manufacture of new superheater units, but by employing the lengths of sound usable tubing remaining from your disassembled superheater units — the cost is substantially under that for new units.

You can eliminate unnecessary locomotive hazards on your road by standardizing on a specialized service — the Elesco unit REmanufacturing service. Turn your problems over to us.

THE SUPERHEATER COMPANY

Representative of AMERICAN THROTTLE COMPANY, Inc.

60 East 42nd Street
NEW YORK

A-978

Peoples Gas Building
CHICAGO

Canada: The Superheater Company, Limited, Montreal

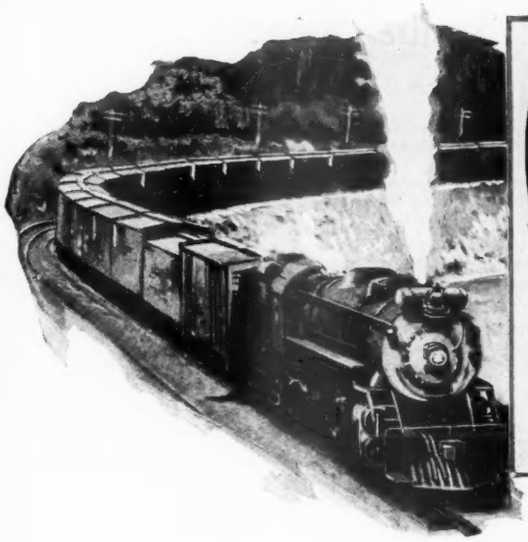
Superheaters - Feed Water Heaters - Exhaust Steam Injectors - Superheated Steam Pyrometers - American Throttles

Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1935—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures	Equipment	Traffic	Transportation	General	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income	Net ry. operating income, 1934
Southern Ry.	March	6,644	$5,722,231	$626,020	$7,010,055	$843,541	$1,263,824	$145,201	$2,558,723	$245,956	$5,101,406	72.8	$1,908,649	$1,463,128	$1,235,516	$1,674,115
	3 mos.	6,644	16,078,561	1,887,773	19,800,991	2,533,566	3,713,344	436,444	7,496,435	729,809	15,040,929	76.0	4,760,062	3,416,974	2,845,662	3,981,214
Alabama Great Southern	March	315	335,324	40,105	412,662	84,549	98,079	9,881	147,457	15,004	357,566	86.6	55,096	27,560	10,185	56,569
	3 mos.	315	932,036	113,789	1,145,074	242,248	293,912	31,195	414,735	43,865	1,033,988	90.3	111,086	28,387	12,427	176,046
Cinn., New Orleans & Texas Pac.	March	336	944,368	64,322	1,082,156	160,571	191,113	23,421	284,125	36,778	701,555	64.8	380,601	319,119	278,100	340,579
	3 mos.	336	2,685,848	212,211	3,094,979	483,714	580,691	71,798	828,337	110,840	2,091,249	67.6	1,003,730	808,875	721,930	886,940
Georgia Southern & Florida	March	397	108,035	32,422	160,594	29,552	28,489	1,617	72,207	2,325	136,890	85.2	23,704	10,981	8,201	33,398
	3 mos.	397	287,250	95,307	438,847	83,752	102,213	4,899	203,209	7,149	409,051	93.2	29,796	—8,344	—5,592	55,742
New Orleans & Northeastern	March	204	158,802	21,239	195,615	32,336	34,576	4,813	69,988	8,381	151,503	77.4	44,112	21,563	14,575	17,602
	3 mos.	204	435,775	50,311	529,390	84,657	103,858	15,901	192,376	25,067	426,334	80.5	103,056	34,802	1,069	—2,628
Northern Alabama	March	99	48,855	1,636	52,178	9,736	1,660	1,119	18,237	1,763	32,515	62.3	19,663	15,957	2,587	—953
	3 mos.	99	138,391	4,600	147,696	31,349	4,262	3,345	50,472	5,052	94,480	64.0	53,216	42,107	4,432	18,375
Southern Pacific	March	8,793	7,080,789	1,311,287	9,317,731	881,302	1,672,863	267,601	3,509,693	547,473	7,057,762	75.7	2,259,969	1,466,434	1,163,538	1,069,429
	3 mos.	8,791	19,844,866	3,943,080	26,318,838	2,534,665	4,847,521	785,594	10,090,516	1,647,727	20,458,043	77.7	5,860,795	3,502,095	2,626,982	1,384,933
So. Pac. Steamship Lines	March	....	389,034	7,547	406,541	15,806	87,130	15,176	309,321	17,903	445,336	109.5	—38,795	—39,598	—39,730	—13,595
	3 mos.	....	1,054,369	22,776	1,115,597	39,967	262,534	45,500	921,637	54,016	1,323,654	118.6	—208,057	—211,733	—212,129	—201,483
Texas & New Orleans	March	4,443	2,308,873	216,654	2,914,415	373,521	521,617	114,669	1,014,990	201,912	2,243,737	77.0	670,678	455,956	252,858	54,798
	3 mos.	4,443	6,478,104	635,262	8,135,370	1,079,137	1,562,531	340,505	2,959,272	607,050	6,605,199	81.2	1,530,171	860,220	265,635	—205,924
Spokane, Portland & Seattle	March	552	391,823	26,630	451,398	34,392	62,591	5,478	150,866	20,651	275,998	61.1	175,400	125,242	114,524	152,765
	3 mos.	552	956,934	85,429	1,138,506	97,596	184,506	16,005	411,296	61,984	776,298	68.2	362,208	206,626	174,097	231,293
Tennessee Central	March	286	162,175	4,458	176,947	26,990	27,688	4,513	62,391	12,724	134,266	75.9	42,681	38,458	26,856	35,882
	3 mos.	286	503,040	14,678	549,022	81,754	80,524	14,668	195,268	39,352	411,338	74.9	137,684	125,484	88,256	108,253
Texas & Pacific	March	1,949	1,492,673	153,228	1,869,813	187,071	348,887	65,798	577,016	144,112	1,342,184	71.8	527,629	425,773	321,057	420,206
	3 mos.	1,949	4,239,739	440,604	5,304,086	571,062	1,004,301	197,807	1,677,889	410,662	3,915,029	73.8	1,389,057	1,084,698	778,669	1,011,251
Texas Mexican	March	162	87,402	312	99,537	23,898	13,714	3,110	33,286	6,855	80,620	81.0	18,917	14,755	9,102	25,100
	3 mos.	162	301,879	1,160	335,943	47,402	42,175	9,459	100,279	20,295	219,034	65.2	116,909	104,490	81,416	27,562
Toledo, Peoria & Western	March	239	141,998	19	144,158	38,093	9,549	14,687	38,453	9,574	110,356	76.6	33,802	28,402	13,684	13,677
	3 mos.	239	375,795	38	381,962	87,835	24,317	42,192	112,475	28,500	295,319	77.3	86,643	72,733	34,300	28,180
Union Pacific	March	3,589	4,320,386	386,930	5,205,868	487,713	1,167,254	120,008	1,749,360	350,456	3,951,612	75.9	1,254,256	843,690	657,804	806,564
	3 mos.	3,603	12,056,871	1,132,347	14,536,055	1,113,966	3,575,712	347,944	5,108,312	1,062,913	11,429,403	78.6	3,106,652	1,875,014	1,297,694	2,089,565
Oregon Short Line	March	2,504	1,641,632	90,714	1,847,893	183,756	304,810	31,075	598,407	121,139	1,257,676	68.1	590,217	368,528	288,938	273,345
	3 mos.	2,504	4,495,706	267,566	5,102,648	415,217	922,132	91,839	1,751,517	357,947	3,591,813	70.4	1,510,835	844,557	604,822	620,076
Oregon, Wash. R. R. & Nav. Co.	March	2,293	1,080,916	88,840	1,290,016	210,690	185,467	47,005	492,794	102,348	1,044,922	81.0	245,094	120,006	54,813	167,726
	3 mos.	2,293	2,876,540	262,609	3,482,296	468,499	544,165	139,322	1,444,516	316,281	2,932,634	84.2	549,662	174,182	—80,326	139,355
Los Angeles & Salt Lake	March	1,234	1,178,323	130,178	1,413,897	166,718	208,356	45,878	423,641	70,610	947,645	67.0	466,252	351,070	240,132	266,737
	3 mos.	1,234	3,272,300	359,242	3,929,685	411,355	667,694	137,794	1,223,779	208,201	2,741,376	69.8	1,188,309	842,720	514,912	463,851
St. Joseph & Grand Island	March	258	206,279	1,781	214,942	41,122	21,543	2,358	72,478	15,029	153,493	71.4	61,449	48,956	25,656	57,532
	3 mos.	258	591,257	5,050	615,342	91,844	65,235	7,018	207,872	44,414	418,745	68.1	196,597	157,463	86,212	192,547
Utah	March	111	84,825	.....	85,035	11,384	22,623	469	19,767	5,586	59,829	70.4	25,206	13,162	9,834	—14,892
	3 mos.	111	277,638	.....	278,932	34,834	67,763	1,470	66,530	16,573	187,170	67.1	91,762	53,699	34,913	—13,001
Virginian	March	619	1,296,919	3,324	1,358,807	101,427	230,567	17,487	247,674	39,662	636,676	46.9	722,131	562,131	587,581	625,463
	3 mos.	619	3,823,260	9,231	4,000,983	284,090	682,121	51,763	719,464	122,721	1,859,695	46.5	2,141,288	1,651,282	1,769,966	1,782,492
Wabash	March	2,447	3,203,787	166,689	3,601,974	328,525	618,765	132,611	1,380,283	200,490	2,668,252	74.1	933,722	793,527	502,032	603,010
	3 mos.	2,447	8,968,465	505,596	10,123,764	965,249	1,731,765	400,264	3,976,150	588,011	7,686,270	75.9	2,437,494	2,028,115	1,085,587	1,140,043
Ann Arbor	March	293	334,759	2,017	344,082	20,796	71,859	10,927	137,815	17,146	258,384	75.1	85,698	72,431	55,049	40,269
	3 mos.	293	901,598	6,755	928,714	61,885	190,919	33,214	391,416	50,113	727,419	78.3	201,295	161,087	110,572	63,008
Western Maryland	March	883	1,390,503	5,676	1,444,588	179,753	349,094	36,097	350,585	48,213	968,779	67.1	475,809	415,809	452,453	474,294
	3 mos.	883	3,762,153	18,543	3,905,355	424,029	944,619	107,939	1,010,146	139,550	2,641,253	67.6	1,264,102	1,084,102	1,165,384	1,225,416
Western Pacific	March	1,213	837,687	31,187	900,013	138,695	177,068	51,987	361,488	56,404	795,081	88.3	104,932	38,039	24,888	78,723
	3 mos.	1,213	2,379,877	68,279	2,542,833	381,386	491,710	158,598	1,079,494	159,334	2,309,060	90.8	233,773	33,477	—63,767	110,102
Wheeling & Lake Erie	March	511	1,018,588	1,220	1,069,092	150,608	373,104	29,790	324,649	48,525	926,449	86.7	142,643	75,548	64,758	262,979
	3 mos.	511	3,039,914	4,264	3,198,652	352,318	1,057,567	88,630	954,598	137,991	2,590,877	81.0	607,775	382,060	342,762	570,174
Wichita Falls & Southern	March	203	32,942	46	35,884	7,902	6,297	1,722	12,606	3,884	32,411	90.32	3,473	1,196	—601	7,896
	3 mos.	203	99,297	118	111,211	25,374	19,690	5,009	38,005	12,290	100,368	90.25	10,843	4,062	—3,075	10,317

Railroad annual report advertising begins on next left-hand page



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Southern Pacific Company — Annual Report

REPORT OF THE BOARD OF DIRECTORS

New York, N. Y., May 10, 1935.

TO THE STOCKHOLDERS OF THE SOUTHERN PACIFIC COMPANY:

Your Board of Directors submits this report of the operations and financial affairs of the Southern Pacific Lines and Affiliated Companies for the year ended December 31, 1934.

Income Account

The following table shows the income account of the Southern Pacific Lines (Southern Pacific Company and Transportation System Companies, combined, excluding offsetting accounts and inter-company dividends), and all separately operated Solely Controlled Affiliated Companies, combined, for the year 1934, compared with the year 1933:

	Year Ended December 31, 1934	+Increase −Decrease	Per Cent
*SOUTHERN PACIFIC LINES			
Railway operating revenues	$149,192,708.71	+$19,331,746.99	14.89
Railway operating expenses	113,579,215.88	+11,205,065.00	10.95
Net revenue from railway operations	$35,613,492.83	+$8,126,681.99	29.57
Railway tax accruals	12,274,874.22	−160,901.90	1.29
Uncollectible railway revenues	*$8,706.09*	+154,806.86	....
Equipment rents—Net	6,058,975.23	+473,562.79	8.48
Joint facility rents—Net	284,691.90	+22,243.98	8.48
Net railway operating income	$17,003,657.57	+$7,946,583.98	87.74
Revenues from miscellaneous operations	$477,312.45	+$51,751.21	12.16
Expenses of miscellaneous operations	455,665.11	+39,108.73	9.39
Net revenue from miscellaneous operations	$21,647.34	+$12,642.48	140.40
Taxes on miscellaneous operating property	975.97	+975.97	....
Miscellaneous operating income	$20,671.37	+$11,666.51	129.56
Total operating income	$17,024,328.94	+$7,958,250.49	87.78
Income from lease of road	$99,164.18	−$1,743.78	1.73
Miscellaneous rent income	1,289,286.88	−163,495.47	11.25
Miscellaneous nonoperating physical property	40,643.25	+873.64	2.20
Separately operated properties —Profit	.....	−4,178.07	100.00
Dividend income	‡10,738,355.17	−2,307,039.14	17.68
Income from funded securities —Bonds and notes	2,910,979.92	−61,475.79	2.07
Income from funded securities —Investment advances	72,916.32	+3,084.52	4.42
Income from unfunded securities and accounts	175,900.60	−48,445.41	21.59
Income from sinking and other reserve funds	386,402.79	+28,053.82	7.83
Miscellaneous income	39,300.87	−82,593.09	67.76
Total nonoperating income	$15,752,949.98	−$2,636,958.77	14.34
Gross income	$32,777,278.92	+$5,321,291.72	19.38
Rent for leased roads	$73,537.27	−$1,160.98	1.55
Miscellaneous rents	742,072.72	−63,976.70	7.94
Miscellaneous tax accruals	35,937.57	−2,481.59	6.46
Separately operated properties —Loss	58,571.42	−36,668.55	38.50
Interest on funded debt—Bonds and notes	29,534,969.12	+18,801.46	.06
Interest on funded debt—Nonnegotiable debt to affiliated companies	389.86	+76.04	24.23
Interest on unfunded debt	1,017,341.04	+112,811.26	12.47
Amortization of discount on funded debt	379,438.75	−7,253.59	1.88
Maintenance of investment organization	22,470.04	−2,153.32	8.75
Miscellaneous income charges	504,325.97	−95,858.57	15.97
Total deductions from gross income	$32,369,053.76	−$77,864.54	.24
Net income of Southern Pacific Lines	$408,225.16	+$5,399,156.26	....
SEPARATELY OPERATED SOLELY CONTROLLED AFFILIATED COMPANIES			
Net deficit of separately operated Solely Controlled Affiliated Companies operating in the United States	*$3,570,083.43*	+$136,769.43	3.98
Net deficit of separately operated Solely Controlled Affiliated Companies operating in the Republic of Mexico	†*745,746.02*	+156,617.56	26.58
Net deficit of separately operated Solely Controlled Affiliated Companies	*$4,315,829.45*	+$293,386.99	7.29
TOTAL ALL COMPANIES			
Combined net deficit of Southern Pacific Lines and all separately operated Solely Controlled Affiliated Companies	*$3,907,604.29*	−$5,105,769.27	56.65

* Income of Southern Pacific Lines, includes interest on bonds of, and rental income from, separately operated Solely Controlled Affiliated Companies, whether earned or not, in order that such income credits will offset income debits reflected in "Net deficit of separately operated Solely Controlled Affiliated Companies." Southern Pacific Company, when necessary, makes advances to these debtor companies to enable them to meet interest on funded debt and rental obligations.

§ Credit.

‡ Dividend income, excludes dividends received from companies included in this statement and, also, from separately operated Solely Controlled Affiliated Companies; dividends from the latter companies being excluded for the reason that the offsetting charges by such companies are made against Profit and Loss and, therefore, would not be offset by the inclusion of the net deficit of such companies.

† Net deficit from operations within the Republic of Mexico, of separately operated Solely Controlled Affiliated Companies, has been converted from Mexican Currency to U. S. Currency at the official exchange rate at close of year, established by Mexican Government for tax purposes, of 3.55 pesos per dollar for 1934 and 3.50 pesos per dollar for 1933; whereas in prior years' reports this conversion was based on an arbitrary exchange rate of 2.00 pesos per dollar.

Transportation Operations—Southern Pacific Lines

The following table shows the Net Railway Operating Income and Traffic Statistics of the Transportation System for the year 1934, compared with the year 1933:

	Year Ended December 31, 1934	+Increase −Decrease	Per Cent
Average miles of road operated	13,291.75	−263.64	1.94
NET RAILWAY OPERATING INCOME			
RAILWAY OPERATING REVENUES			
Freight	$115,239,195.52	+$16,206,027.52	16.36
Passenger	18,729,347.77	+1,015,701.31	5.73
Mail and express	8,136,280.82	+900,136.65	12.44
All other transportation	4,191,927.97	+693,613.58	19.83
Incidental	3,460,961.46	+565,148.17	19.52
Joint facility—Credit	173,870.38	+44,138.93	34.02
Joint facility—Debit	*738,875.21*	−93,019.17	14.40
Total railway operating revenues	$149,192,708.71	+$19,331,746.99	14.89
RAILWAY OPERATING EXPENSES			
Maintenance of way and structures	$15,986,081.57	+$2,368,496.77	17.39
Maintenance of equipment	27,086,367.01	+2,622,747.37	10.72
Total maintenance	$43,072,448.58	+$4,991,244.14	13.11
Traffic	4,842,126.62	+182,226.67	3.91
Transportation	54,388,153.64	+5,778,117.32	11.89
Miscellaneous operations	2,537,218.00	+348,293.72	15.91
General	9,014,977.10	−22,568.04	.25
Transportation for investment—Credit	*275,708.06*	−72,248.81	35.51
Total railway operating expenses	$113,579,215.88	+$11,205,065.00	10.95
Net revenue from railway operations	$35,613,492.83	+$8,126,681.99	29.57
Railway tax accruals	$12,274,874.22	−$160,901.90	1.29
Uncollectible railway revenues	**8,706.09*	+154,806.86	....
Railway operating income	$23,347,324.70	+$8,442,390.75	56.64
Equipment rents—Net	6,058,975.23	+473,562.79	8.48
Joint facility rents—Net	284,691.90	+22,243.98	8.48
Net railway operating income	$17,003,657.57	+$7,946,583.98	87.74

* Credit.

TRAFFIC STATISTICS
(*Steam Rail Lines*)

FREIGHT TRAFFIC			
Freight service train-miles	18,891,322	+2,114,621	12.60
Tons carried—revenue freight	31,369,879	+5,175,794	19.76
Ton-miles—revenue freight	10,115,727,708	+1,863,595,245	22.58
Loaded cars per train	28.96	+1.38	5.00
Net tons per train—all freight	594.99	+49.66	9.11
Revenue per ton-mile—revenue freight	1.099 cents	−.055 cents	4.77
Average distance carried—revenue freight (miles)	322.47	+7.43	2.36
PASSENGER TRAFFIC			
Passenger service train-miles	15,989,904	+432,426	2.78
Passengers carried—revenue	8,897,832	+976,970	12.33
Passenger-miles—revenue	1,058,697,538	+163,857,037	18.31
Passengers per train—revenue passengers	63.72	+9.42	17.35

[Advertisement]

	Year Ended December 31, 1934	+Increase −Decrease	Per Cent
Passenger revenue per passenger-mile	1.628 cents	−.188 cents	10.35
Average distance carried—revenue passengers (miles)	118.98	+6.01	5.32

The total railway operating revenues of $149,192,708.71, for 1934, were $19,331,746.99, or 14.89 per cent, more than for 1933. This was largely due to the increase of 1,863,595,245 ton-miles, or 22.58 per cent, in the volume of revenue freight carried by your Company's steam rail lines, and the increased passenger travel; as the result, principally, of the improvement in general business conditions.

While the exercise of strict economy was continued, operating expenses increased $11,205,065.00, or 10.95 per cent, principally due to the increase in the volume of traffic; tax accruals decreased $160,901.90, or 1.29 per cent; and there was a net increase of $340,999.91, or 5.69 per cent, in equipment and joint facility rents, and other charges; the result being an increase of $7,946,583.98, or 87.74 per cent, in net railway operating income.

Freight revenues increased $16,206,027.52, or 16.36 per cent. The following tabulation shows the revenues and the increases therein by commodity groups:

	Revenues	Increased	Per Cent
Products of Agriculture	$40,715,712	$3,333,523	8.92
Animals and Products	6,490,984	1,297,109	24.97
Products of Mines	7,956,548	1,439,610	22.09
Products of Forests	10,846,006	1,022,728	10.41
Manufactures and Miscellaneous	41,371,641	8,446,829	25.65
Total Carload Freight	$107,380,891	$15,539,799	16.92
Less-than-Carload Freight	7,858,305	666,229	9.26
Total	$115,239,196	$16,206,028	16.36

Passenger revenues increased $1,015,701.31, or 5.73 per cent, due to the increase in passenger travel which resulted, mainly, from improved business conditions and, in some measure, to continuance of the experimental reductions in fares and elimination of the fifty per cent surcharge on Pullman fares, made effective last year.

Mail and Express revenues increased $900,136.65, or 12.44 per cent. A decrease in mail revenues due to less space occupied by mail carried on regular trains was nearly offset by receipts for the transportation of gold for the U. S. Government. Express traffic and revenues were larger as the result of improved business conditions and the increased tonnage carried for the separately operated solely controlled Pacific Motor Transport Company.

All other operating revenues increased $1,209,881.51, or 20.58 per cent, principally attributable to the improvement in business conditions.

Maintenance of Way and Structures increased $2,368,496.77, or 17.39 per cent, due to a larger upkeep program of renewal of ties, rail and fastenings, bridges, trestles, and culverts, in 1934, with the aid of funds secured from the Federal Emergency Administration of Public Works, a portion of such funds being also applied to the increased expenditures for ordinary roadway repairs made necessary by the substantially heavier traffic volume carried during the year. Wage rates increased July 1, 1934; and there were increased charges for retirements in connection with the larger renewal program.

Maintenance of Equipment increased $2,622,747.37, or 10.72 per cent, as the result of reconditioning locomotives, and passenger and freight train cars, to provide sufficient motive power and cars in suitable condition to handle the increased volume of traffic. A portion of the work loan mentioned in the preceding paragraph was applied to these expenditures. Wage rates increased for the last six months of the year; and prices of some materials used in repair work were higher than in 1933.

Transportation expenses increased $5,778,117.32, or 11.89 per cent, principally due to the increase in the volume of traffic handled during the year; and, in part, as the result of the increase in wage rates July 1, 1934; payments to a number of train and enginemen of the Pacific Lines, in settlement of claims for back pay, based on disputed interpretations of the wage agreements; and increased prices for fuel in Texas and Louisiana. Although ton-miles of revenue freight carried by the steam lines increased 22.58 per cent, and revenue passenger miles increased 18.31 per cent, heavier loading of trains enabled your Company to handle the larger volume of traffic with increases in train-miles of 2,114,621, or 12.60 per cent, in freight service, and 432,426, or 2.78 per cent, in passenger service.

The policy of substituting motor truck freight service for branch line steam freight train service was continued with resultant economy; and the abandonment of 161.46 miles of unprofitable branch lines, during the year, resulted in savings in transportation expenses as well as in maintenance of way and structures.

In accordance with the terms of the agreement with organized employees, explained in last year's report, one-fourth of the ten per cent reduction in wages made effective early in 1932 was restored on July 1, 1934; an additional one-fourth was restored on January 1, 1935; and the final one-half of such reduction was restored on April 1, 1935; returning the rail workers to the pay basis of 1931.

In accordance with the provisions of the Railroad Retirement Act your Company and Transportation System Companies charged $761,976.63 and Solely Controlled Affiliated Companies charged $23,754.82 to operating expenses during the months of August, September, and October, representing their proportion of contributions under the Act. The Act was declared unconstitutional by the Supreme Court of the District of Columbia and appeal by the Federal Government was pending before the U. S. Supreme Court at the close of the year. The charges to operating expenses were discontinued as of the end of October and the charges previously made were credited back to operating expenses in equal amounts in November and December. The decision holding the Railroad Retirement Act unconstitutional was affirmed by the U. S. Supreme Court on May 6, 1935.

Capital Stock—Southern Pacific Lines

The decrease during the year in capital stocks of Transportation System Companies *held by the public* amounted to $15,003.22, due to the merger of Southern Pacific Lines in Texas and Louisiana, $15,003.22.

Funded Debt—Southern Pacific Lines

The net increase during the year in funded debt of Southern Pacific Company and Transportation System Companies *held by the public* of $6,040,484.31, is the result of $5,330,000 borrowed from the Reconstruction Finance Corporation and $12,000,000 borrowed from the Federal Emergency Administration of Public Works, less $11,289,515.69 of funded debt retired consisting largely of Equipment Trust certificates and Southern Pacific Company 5% Twenty-Year Convertible Bonds maturing.

Investment in Road and Equipment—Southern Pacific Lines

The decrease during the year in Investment in Road and Equipment of the Transportation System amounted to $18,880,427.05, due principally to retirement of rolling stock and floating equipment and the abandonment of unprofitable branch lines.

Houston Passenger Station.—The new passenger station at Houston, Texas, was completed and opened for use on September 1, 1934. The construction of the station and related facilities was completed by the use of current funds, and your Company's application to the Reconstruction Finance Corporation for the proposed work loan of $1,200,000, mentioned in last year's report, has been withdrawn at the Company's request.

Air Conditioning Equipment for Passenger Cars.—The installation of air conditioning equipment in 27 club, lounge, parlor, and dining cars, of your Company's ownership; and in a number of certain types of Pullman cars of which your Company pays rental for 22 cars, was completed and the cars were placed in service during 1934. In addition 2 cafe-lounge cars of your Company were so equipped during the year. The 1935 program provides for equipping sufficient chair cars, coaches, Pullman standard and tourist sleeping cars, and additional dining cars, so that all passenger carrying cars in the principal trains of your Company, and the dining cars, cafe-lounge or cafe-sleeping cars, and observation-sleeping cars in certain other of your Company's trains, will be air conditioned. This program involves the installation of air conditioning equipment by your Company in 95 cars of its ownership; and by the Pullman Company in 179 cars of its ownership, for which your Company will pay rental.

Automobile Cars Equipped with Loading Devices.—The program, mentioned in last year's report, of equipping automobile cars with mechanical devices to facilitate the loading and unloading of automobiles was extended to provide for equipping 700 cars with this device during 1934, and 200 cars during 1935, making a total of 1,050 cars of your Company's ownership which as of the date of this report have been improved in this manner.

Southern Pacific Golden Gate Ferries

The combined net income of Southern Pacific Golden Gate Company, a holding company, and Southern Pacific Golden Gate Ferries, Ltd., which operates vehicular ferries on San Francisco Bay, was $600,057.48, a decrease of $227,164.19, or 27.46 per cent, compared with 1933. Ownership of all the outstanding capital stock of Southern Pacific Golden Gate Ferries, Ltd., is in the name of the Southern Pacific Golden Gate Company, in the present voting stock of which your Company owns a 50.12 per cent interest. The decrease in net income is due to increase of $468,454.53 in depreciation and obsolescence charges. In expectation of the completion of construction of the San Francisco Bay bridge and the Golden Gate bridge, the board of directors of the ferry operating company, on October 19, 1934, approved the establishment of an obsolescence reserve which is being accrued over the period January 1, 1932, to December 31, 1936, the amounts applicable to the portion of this period prior to October 1, 1934, being charged to profit and loss in 1934; and the boards of directors of both the ferry operating company and the

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aforementioned holding company, on the same date, approved immediate discontinuance of dividends on all classes of the capital stock of these companies to conserve the cash resources for the purpose of retiring the bonded indebtedness as much as possible prior to establishment of bridge competition.

Pacific Greyhound Corporation and Southwestern Greyhound Lines, Inc.

The Southern Pacific Company owns 39.05 per cent of the common and 22.78 per cent of the preferred stock of Pacific Greyhound Corporation, which solely controls subsidiaries operating most of the important motor bus lines in the territory south of Portland, Oregon; and west of El Paso, Texas; Albuquerque, New Mexico; and Salt Lake City, Utah. Operations of these motor coach lines during the year 1934 extended over an average of 7,692 route miles, motor coaches having traveled 22,462,843 miles and carried 4,232,456 passengers. Total gross revenues were $5,959,427.73, operating expenses were $3,391,793.03, taxes $515,474.77, and depreciation and retirements amounted to $616,071.76; leaving a net operating profit of $1,436,088.17. Net income after all charges amounted to $1,300,033.12, an increase of $784,744.71, or 152.29 per cent, over 1933.

Southwestern Greyhound Lines, Inc., in which your Company and St. Louis Southwestern Railway Company each owns one-sixth voting interest, and together own 11.3 per cent of other outstanding capital stock, on December 31, 1934, completed its first calendar year of operations between Albuquerque, New Mexico, and El Paso, Texas, on the west; and St. Louis, Missouri, and Memphis, Tennessee, on the east. Operations extended over an average of 5,517 route miles; motor coaches traveled 14,480,853 miles and carried 1,687,965 passengers. Gross revenues were $3,556,942.71, operating expenses $2,673,034.68, taxes $362,070.58, depreciation and retirements $147,435.21; and the net income, after all charges, was $379,849.71.

Merger of Southern Pacific Lines in Texas and Louisiana

The proposed merger of Southern Pacific Lines in Texas and Louisiana, outlined in last year's report, was completed during the year.

BALANCE SHEET OF SOUTHERN PACIFIC LINES

SOUTHERN PACIFIC COMPANY AND TRANSPORTATION SYSTEM COMPANIES, COMBINED

ASSETS—DECEMBER 31, 1934, COMPARED WITH DECEMBER 31, 1933 EXCLUDING INTER-COMPANY OPEN ACCOUNT BALANCES

The assets reported below are stated on the basis of the classifications prescribed by the Interstate Commerce Commission, no attempt being made to adjust to current estimated values.

ASSETS	December 31, 1934	+Increase −Decrease
INVESTMENTS		
Investment in road and equipment	$1,480,741,246.43	−$18,880,427.05
Improvements on leased railway property	304,366.82	+873.76
Sinking funds (a)	7,225,673.97	+410,631.37
Deposits in lieu of mortgaged property sold	112,765.41	+6,277.39
Miscellaneous physical property	3,396,059.73	−86,436.93
Investments in affiliated companies:		
Stocks (a)	392,301,214.41	−6,362,540.13
Bonds (a)	169,652,671.40	−4,332,223.89
Stocks / Bonds } Cost inseparable (a)	56,462,970.20	−2,753,105.00
Stocks / Bonds / Advances } Cost inseparable (a)	2,250,000.00	+175.00
Notes	23,910,779.26	−319,709.93
Advances	65,110,267.12	+4,400,882.33
Other investments:		
Stocks	5,252,579.02	−377.70
Bonds	2,781,200.80	−1,442,561.45
Notes	551,690.49	+37,889.93
Advances	838,910.09	−65,716.12
Miscellaneous	1,448,910.73	−41,289.72
Total	$2,212,341,305.88	−$29,427,658.14
CURRENT ASSETS		
Cash	$28,249,307.65	+$6,961,507.75
Demand loans and deposits	.....	−1,305.00
Time drafts and deposits	4,600,000.00	+500,000.00
Special deposits	679,537.37	+593,564.68
Loans and bills receivable	1,377,576.94	+105,935.16
Traffic and car-service balances receivable	2,643,073.85	−266,841.67
Net balance receivable from agents and conductors	1,754,160.95	+351,896.35
Miscellaneous accounts receivable	4,203,613.36	+40,097.20
Material and supplies	17,201,843.95	+993,495.22
Interest and dividends receivable	5,870,563.58	+717,798.91
Rents receivable	14,092.19	−16,428.69
Other current assets	573,874.18	+413,634.01
Total	$67,167,644.02	+$10,393,353.92
DEFERRED ASSETS		
Working fund advances	$70,902.13	+$1,843.27
Insurance and other funds	57,310.00	.....
Other deferred assets	1,807,216.67	−350,163.42
Total	$1,935,428.80	−$348,320.15
UNADJUSTED DEBITS		
Rents and insurance premiums paid in advance	$196,613.31	−$28,071.99
Discount on capital stock (a)	5,824,083.45	−135,000.00
Discount on funded debt (a)	12,224,964.29	−382,705.47
Other unadjusted debits	8,100,142.74	−2,998,770.03
Securities issued or assumed—Unpledged (b)	1,356,375.00	−6,375,000.00
Securities issued or assumed—Pledged (b)	10,524,000.00	+8,157,000.00
Total	$26,345,803.79	−$3,544,547.49
Grand total	$2,307,790,182.49	−$22,927,171.86

LIABILITIES—DECEMBER 31, 1934, COMPARED WITH DECEMBER 31, 1933, EXCLUDING INTER-COMPANY OPEN ACCOUNT BALANCES

LIABILITIES	December 31, 1934	+Increase −Decrease
CAPITAL STOCK		
Held by the public	$377,277,705.64	−$15,003.22
Held within the system	377,357,300.00	−6,114,516.78
Total stock	$754,635,005.64	−$6,129,520.00
Premium on capital stock of Southern Pacific Company	$6,304,845.00	.....
Total	$760,939,850.64	−$6,129,520.00
GOVERNMENTAL GRANTS		
Grants in aid of construction	$1,060,223.27	+$62,905.79
LONG TERM DEBT		
Funded debt unmatured:		
Held by the public	$683,213,711.64	+$6,040,484.31
Held within the system	147,271,357.90	−7,166,000.00
Held by Solely Controlled Affiliated Companies	233,000.00	+110,000.00
Total funded debt	$830,718,069.54	−$1,015,515.69
Nonnegotiable debt to affiliated companies:		
Open accounts	7,034,854.72	−7,389,952.03
Total	$837,752,924.26	−$8,405,467.72
CURRENT LIABILITIES		
Loans and bills payable	$21,500,000.00	.....
Traffic and car-service balances payable	2,173,021.96	−$545,667.71
Audited accounts and wages payable	7,094,701.88	+192,711.26
Miscellaneous accounts payable	4,100,437.10	+1,144,274.98
Interest matured unpaid	287,946.64	+10,910.47
Interest payable January 1st	3,393,370.00	−18,720.00
Dividends matured unpaid	8,179.00	−35.50
Funded debt matured unpaid	84,050.00	+22,500.00
Unmatured interest accrued	6,010,884.78	−24,715.33
Unmatured rents accrued	110,697.38	−13,412.03
Other current liabilities	375,469.49	+20,982.59
Total	$45,138,758.23	+$788,828.73
DEFERRED LIABILITIES		
Liability for provident funds	$462,908.24	−$1,852.90
Other deferred liabilities	490,736.86	−91,556.15
Total	$953,645.10	−$93,409.05
UNADJUSTED CREDITS		
Tax liability	$2,769,631.39	+$72,812.89
Insurance and casualty reserves	2,396,841.31	−78,034.82
Accrued depreciation—Road	4,000,184.23	+370,249.51
Accrued depreciation—Equipment	138,965,499.60	+1,419,920.03
Other unadjusted credits	35,078,002.69	−3,082,917.97
Total	$183,210,159.22	−$1,297,970.36
CORPORATE SURPLUS		
Additions to property through income and surplus	$11,052,248.47	−$5,644.65
Funded debt retired through income and surplus	12,760,472.86	+303,793.06
Sinking fund reserves	9,591,233.90	+524,219.87
Appropriated surplus not specifically invested	3,818,177.83	.....
Total appropriated surplus	$37,222,133.06	+$822,368.28
Profit and loss—Balance	441,512,488.71	−8,674,907.53
Total corporate surplus	$478,734,621.77	−$7,852,539.25
Grand total	$2,307,790,182.49	−$22,927,171.86

(a) There is included under investments in Sinking Funds and in Affiliated Companies, $268,632,987.61 representing cost of capital stocks, $126,123,532.65 representing cost of bonds, and $50,797,546.45 representing inseparable cost of certain stocks and bonds, all of which are "held within the system," the face value of which is reported on the liability side of this balance sheet. There is also included under "Unadjusted Debits," $5,824,083.45 representing discount on capital stocks and $15,583.39 of unamortized discount on bonds which are owned within the group of companies included in this combined balance sheet. (b) Excluded from total assets, and corresponding amounts are excluded from outstanding funded debt, in accordance with regulations of the Interstate Commerce Commission.

[Advertisement]

Mississippi River Bridge

The new railroad and highway bridge being constructed over the Mississippi River at New Orleans by the State of Louisiana and the City of New Orleans jointly, mentioned in last year's report, which under the terms of an agreement will be used by your Company for operation of its trains and cars into and out of New Orleans, permitting discontinuance of its train ferries at New Orleans and its train yard operations at Algiers, is expected to be completed in the latter part of 1935.

Southern Pacific Steamship Lines

The service of your Company's steamship lines was improved, during the year, by rearrangement of sailings to and from various ports, and effective with the sailing from Galveston September 4, 1934, New Bedford, Massachusetts, was included in the ports of call of steamers in the Boston line. As a further improvement in the service of these steamship lines, Norfolk, Virginia, was established as a port of call for steamers operating in the Baltimore line, effective with sailing from Galveston on February 26, 1935.

General Traffic Conditions

General Conditions.—Although business in the territory served by your Lines improved as compared with the year 1933, there were a number of retarding factors affecting a more complete recovery to normal conditions. Notwithstanding the fact that some of these adverse influences still exist, the outlook for 1935 is for some further increase in the volume of traffic. More commercial construction was undertaken during the year and substantial progress was made on the large public construction projects for which contracts were let or on which work was commenced during 1933. Construction of the Boulder Dam is nearing completion and impounding of water was commenced on February 1, 1935. Control of the Colorado River, made possible by this dam, will end the annual hazard of flood damage in the fertile areas of the Imperial Valley of California and the portion of Lower California served by your lines, as well as assuring a sufficient supply of water for the lands irrigated from this river.

Motor Truck Competition.—Notwithstanding increased operating costs resulting from adoption by motor truck carriers of codes established under the provisions of the National Industrial Recovery Act, there was no lessening of motor truck competition during 1934, and in Pacific Coast states competitive trucking operations and hauling distances were extended during the year; particularly interstate trucking operations between California and adjacent states, which operations are not subject to regulation. In Texas, in which state enforcement of motor truck laws enacted in 1931 prevents the establishment of new trucking routes that are economically unnecessary, there was a decrease in the number of common carrier truck operators due to consolidations of motor freight lines which, however, continued operations on previously established routes; and the courts upheld the action of the Railroad Commission of Texas in denying permits to a number of operators seeking to establish new routes.

Industrial.—A total of 704 new industries were located on your Lines during 1934, and 328 industries discontinued operations or moved to other locations. There was a tendency at the close of the year toward expansion of plants and facilities, the operations of which have been curtailed for several years; and in Texas, leases of locations to produce shippers during the last half of 1934 were for periods of one year or longer, in contrast with the practice of such shippers in recent years to secure facilities for seasonal use on a temporary basis.

By order of the Board of Directors,
HALE HOLDEN,
Chairman.

Missouri-Kansas-Texas Railroad Company

and Controlled Companies

Annual Report for the Year Ended December 31, 1934

St. Louis, Mo., April 26, 1935.

TO THE STOCKHOLDERS:

The Board of Directors submit herewith report of the operations and affairs of your property for the year ended December 31, 1934.

CONSOLIDATED INCOME ACCOUNT

Year Ended December 31, 1934, Compared With Year Ended December 31, 1933

	1934 Amount	1933 Amount	+Increase −Decrease
Average Mileage Operated	3,293.93	3,293.93	.....
OPERATING REVENUES:			
Freight	$21,535,321.50	$21,314,966.76	+$220,354.74
Passenger	1,919,212.51	1,835,170.38	+84,042.13
Mail	1,069,259.59	1,052,640.10	+16,619.49
Express	640,355.58	504,939.55	+135,416.03
Miscellaneous	852,495.16	708,194.01	+144,301.15
Incidental	233,662.20	197,916.77	+35,745.43
Joint Facility	79,080.23	82,847.60	−3,767.37
Total Operating Revenues	$26,329,386.77	$25,696,675.17	+632,711.60
OPERATING EXPENSES:			
Maintenance of Way and Structures	$3,211,474.53	$3,093,173.85	+$118,300.68
Maintenance of Equipment	*4,761,778.46	3,843,890.23	+917,888.23
Traffic Expenses	1,319,245.32	1,469,285.41	−150,040.09
Transportation Expenses	9,389,428.78	8,745,473.97	+643,954.81
Miscellaneous Operations	206,829.43	169,079.07	+37,750.36
General Expenses	1,715,558.09	1,684,507.28	+31,050.81
Transportation for Investment—Cr.	11,471.91	7,205.63	−4,266.28
Total Operating Expenses	$20,592,842.70	$18,998,204.18	+$1,594.638.52
Net Revenue from Railway Operations	$5,736,544.07	$6,698,470.99	−$961,926.92
RAILWAY TAX ACCRUALS	$1,771,109.04	$1,646,435.05	+$124,673.99
UNCOLLECTIBLE RAILWAY REVENUES	49,389.13	28,586.04	+20,803.09
Total	$1,820,498.17	$1,675,021.09	+$145,477.08
Railway Operating Income	$3,916,045.90	$5,023,449.90	−$1,107,404.00

* Depreciation has been accrued at rates which average 2.61% for locomotives and 3.17% for other equipment.

CONSOLIDATED INCOME ACCOUNT—Continued

	1934 Amount	1933 Amount	+Increase −Decrease
OTHER OPERATING INCOME:			
Rent from Locomotives	$21,030.64	$14,760.53	+$6,270.11
Rent from Passenger Train Cars	89,015.54	75,724.91	+13,290.63
Rent from Work Equipment	8,141.17	5,667.85	+2,473.32
Joint Facility Rent Income	200,667.61	182,939.02	+17,728.59
Total Other Operating Income	$318,854.96	$279,092.31	+$39,762.65
Total Operating Income	$4,234,900.86	$5,302,542.21	−$1,067,641.35
DEDUCTIONS FROM OPERATING INCOME:			
Hire of Freight Cars—Debit Balance	$1,495,915.56	$1,321,734.75	+$174,180.81
Rent for Locomotives	36,305.38	36,110.05	+195.33
Rent for Passenger Train Cars	107,812.88	96,432.47	+11,380.41
Rent for Work Equipment	9,013.73	4,764.87	+4,248.86
Joint Facility Rents	877,146.15	899,755.92	−22,609.77
Total Deductions from Operating Income	$2,526,193.70	$2,358,798.06	+$167,395.64
Net Railway Operating Income	$1,708,707.16	$2,943,744.15	−$1,235,036.99
NON-OPERATING INCOME:			
Income from Lease of Road	$112,543.25	$120,435.15	−$7,891.90
Miscellaneous Rent Income	224,664.96	273,833.55	−49,168.59
Miscellaneous Non-Operating Physical Property	58,398.40	4,369.60	+54,028.80
Dividend Income	2,099.00	1,589.00	+510.00
Income from Funded Securities	7,662.63	8,844.85	−1,182.22
Income from Unfunded Securities and Accounts	13,255.49	34,155.71	−20,900.22
Miscellaneous Income	2,585.50	1,081.75	+1,503.75
Total Non-Operating Income	$421,209.23	$444,309.61	−$23,100.38
Gross Income	$2,129,916.39	$3,388,053.76	−$1,258,137.37
DEDUCTIONS FROM GROSS INCOME:			
Miscellaneous Rents	$10,880.60	$11,016.28	−$135.68
Miscellaneous Tax Accruals	37,184.77	9,540.02	+27,644.75

[Advertisement]

	1934 Amount	1933 Amount	+Increase −Decrease
Interest on Unfunded Debt	24,211.57	31,579.14	−7,367.57
Miscellaneous Income Charges	354.36	274.34	+80.02
Total Deductions from Gross Income	$72,631.30	$52,409.78	+$20,221.52
Balance Available for Interest	$2,057,285.09	$3,335,643.98	−$1,278,358.89
Fixed Interest Charges	4,169,042.73	4,173,763.70	−4,720.97
Balance Available for Interest on Adjustment Bonds	*$2,111,757.64*	*$838,119.72*	−$1,273,637.92
Interest on Adjustment Bonds	678,878.36	678,878.36	.....
Net Income	*$2,790,636.00*	*$1,516,998.08*	−1,273,637.92

Italics denote debit.

Missouri-Kansas-Texas Lines — Consolidated General Balance Sheet

ASSETS

	December 31, 1934	December 31, 1933	+Increase −Decrease
INVESTMENTS AT COST:			
Investment in Road and Equipment:			
Road	$212,581,374.73	$214,574,010.56	−$1,992,635.83
Equipment	34,170,701.77	42,057,123.75	−7,886,421.98
	$246,752,076.50	$256,631,134.31	−$9,879,057.81
Deposits in Lieu of Mortgaged Property Sold	212.50	212.50	.....
Miscellaneous Physical Property	2,083,734.28	999,871.68	+1,083,862.60
Investments in Affiliated Companies—Pledged	527,000.00	527,000.00	.....
Investments in Affiliated Companies—Unpledged	1,672,005.42	1,732,014.22	−60,008.80
Other Investments	*122,119.74	586,019.09	−463,899.35
TOTAL INVESTMENTS	$251,157,148.44	$260,476,251.80	−$9,319,103.36
CURRENT ASSETS:			
Cash	$3,491,058.01	$5,628,825.74	−$2,137,767.73
Demand Loans and Deposits	.....	150,000.00	−150,000.00
Time Drafts and Deposits	.....	920,594.16	−920,594.16
Special Deposits	6,438.77	7,745.02	−1,306.25
Loans and Bills Receivable	59,285.11	40,782.40	+$18,502.71
Traffic and Car Service Balances Receivable	226,370.92	308,327.02	−81,956.10
Net Balance Receivable from Agents and Conductors	404,545.23	512,299.69	−107,754.46
Miscellaneous Accounts Receivable	946,202.13	842,001.63	+104,200.50
Material and Supplies at cost	3,201,678.46	2,662,802.57	+538,875.89
Interest and Dividends Receivable	6,055.18	9,467.91	−3,412.73
Other Current Assets	13,455.94	18,305.38	−4,849.44
TOTAL CURRENT ASSETS	$8,355,089.75	$11,101,151.52	−$2,746,061.77
DEFERRED ASSETS:			
Working Fund Advances	$61,420.57	$64,527.09	−$3,106.52
Other Deferred Assets	223,190.82	349,532.63	−126,341.81
TOTAL DEFERRED ASSETS	$284,611.39	$414,059.72	−$129,448.33
UNADJUSTED DEBITS:			
Rents and Insurance Premiums Paid in Advance	$16,265.70	$25,036.15	−$8,770.45
Other Unadjusted Debits	182,979.30	199,693.10	−16,713.80
TOTAL UNADJUSTED DEBITS	$199,245.00	$224,729.25	−$25,484.25
TOTAL	$259,996,094.58	$272,216,192.29	−$12,220,097.71
The following Assets not included in Balance Sheet Accounts:			
Securities Issued or Assumed—Unpledged:			
Preferred Stock, Series "A"	$5,528,364.39	$5,528,364.39	.....
Common Stock	15,730,515.52	15,730,515.52	.....
Long Term Debt	11,392,905.46	11,392,905.46	.....
Securities Issued or Assumed—Pledged:			
Long Term Debt	17,554,000.00	17,547,000.00	+$7,000.00
Long Term Debt Held for Exchange of Underlying Securities, per contra	31,088,000.00	31,095,000.00	−7,000.00

Intercorporate Assets and Liabilities are excluded.
* Represents cost, less amounts written off.

LIABILITIES

	December 31, 1934	December 31, 1933	+Increase −Decrease
STOCK:			
CAPITAL STOCK:			
Preferred, Series "A" (Par value $100 per share)	$66,672,920.77	$66,672,073.08	+$847.69
Common (No par value. See note)	66,672,747.67	66,672,747.67	.....
STOCK LIABILITY FOR CONVERSION:			
Preferred, Series "A" (Par value $100 per share)	30,814.84	31,662.53	−847.69
Common (No par value. See note)	16,736.81	16,736.81	.....
TOTAL STOCK	$133,393,220.09	$133,393,220.09	.....
LONG TERM DEBT:			
Mortgage Bonds	$93,094,179.30	$93,094,179.30	.....
Equipment Trust Obligations	84,100.00	168,200.00	−$84,100.00
Income Mortgage Bonds	13,577,567.24	13,577,567.24	.....
TOTAL LONG TERM DEBT	$106,755,846.54	$106,839,946.54	−$84,100.00
CURRENT LIABILITIES:			
Loans and Bills Payable	$62,020.68	$186,062.04	−$124,041.36
Traffic and Car Service Balances Payable	514,297.83	546,350.92	−32,053.09
Audited Accounts and Wages Payable	1,981,268.65	2,879,011.90	−897,743.25
Miscellaneous Accounts Payable	43,547.67	75,826.40	−32,278.73
Interest Matured Unpaid	1,615,520.74	1,636,012.92	−20,492.18
Dividends Matured Unpaid	16,170.75	16,702.75	−532.00
Funded Debt Matured Unpaid	1,446.00	1,546.00	−100.00
Unmatured Interest Accrued	452,333.70	454,350.21	−2,016.51
Unmatured Rents Accrued	87,241.44	87,457.91	−216.47
Other Current Liabilities	299,410.52	129,558.63	+169,851.89
TOTAL CURRENT LIABILITIES	$5,073,257.98	$6,012,879.68	−$939,621.70
DEFERRED LIABILITIES:			
Other Deferred Liabilities	$262,500.65	$269,869.72	−$7,369.07
UNADJUSTED CREDITS:			
Tax Liability	$595,085.38	$767,320.16	−$172,234.78
*Accrued Depreciation—Road	136,649.49	136,649.49	.....
*Accrued Depreciation—Equipment	10,592,896.29	12,221,505.91	−1,628,609.62
Other Unadjusted Credits	481,152.77	460,708.60	+20,444.17
TOTAL UNADJUSTED CREDITS	$11,805,783.93	$13,586,184.16	−$1,780,400.23
CORPORATE SURPLUS:			
Additions to Property through Income and Surplus	$98,539.23	$89,251.33	+$9,287.90
Profit and Loss—Balance	2,606,946.16	12,024,840.77	−9,417,894.61
TOTAL CORPORATE SURPLUS	$2,705,485.39	$12,114,092.10	−$9,408,606.71
TOTAL	$259,996,094.58	$272,216,192.29	−$12,220,097.71
The following Liabilities not included in Balance Sheet Accounts:			
Securities held by or for the Company—Unpledged:			
Preferred Stock, Series "A"	$5,528,364.39	$5,528,364.39	.....
Common Stock	15,730,515.52	15,730,515.52	.....
Long Term Debt	11,392,905.46	11,392,905.46	.....
Securities held by or for the Company—Pledged:			
Long Term Debt	17,554,000.00	17,547,000.00	+$7,000.00
Liability to holders of underlying Long Term Debt in exchange for which securities are held, per contra	31,088,000.00	31,095,000.00	−$7,000.00

There were 808,938.9429 shares Common Stock outstanding in hands of the public December 31, 1934. There were also 203.0673 shares included in Stock Liability for Conversion on December 31, 1934.

The Company is guarantor, jointly with other Companies, of the securities of certain terminal companies, none of which is in default.

Dividends on 7% Cumulative Preferred Stock, Series "A," have not been declared or paid in respect to the period subsequent to September 30, 1931.

No provision is made in the above balance sheet for proposed additional assessments in respect to prior years' Kansas State Taxes, liability for which is not admitted by the Company.

* Future accruals of depreciation will be at rates prescribed by order of the Interstate Commerce Commission.

[Advertisement]

Financial

There was no change in the amount of preferred or common stock outstanding in the hands of the public during the year.

Long term debt consisting of equipment trust obligations amounting to $84,100 matured and were paid during the year.

Underlying bonds amounting to $7,000 were exchanged for a similar amount of Prior Lien Series "A" and "B" Bonds.

Equipment notes issued in 1933 matured and were paid in the amount of $124,041.36, leaving outstanding $62,020.68 on account of these notes at December 31, 1934.

Interest on Adjustment Mortgage Bonds outstanding in hands of the public, due April 1 and October 1, 1934, was declared by the Board of Directors as due and payable.

The Interstate Commerce Commission granted authority to charge Profit and Loss during the year with $4,821,892.80 covering equipment and $957,327.19 covering road property retirements.

Operation

Total operating revenues during 1934 were $632,712 more than in 1933, or 2.46 per cent. Operating expenses during 1934 were $1,594,639 more than in 1933, or 8.39 per cent.

Although increase in operating revenues was small, it is gratifying in view of adverse conditions beyond control, which prevailed in the Southwestern territory during the year.

A substantial portion of our revenue is derived from the movement of products of agriculture. The principal commodities in this group are wheat, other grains and cotton. Drought, reduced acreage, and government loans to cotton farmers that withheld cotton from market, were the factors that substantially depressed our agriculture traffic in 1934. At compress points in our territory, large quantities of cotton are now being held in storage for more favorable market.

During the last six months of 1934, conditions within the oil industry restricted production in the Mid-Continent field which we serve, and substantially reduced our movement of refined oil and petroleum products.

The revenue from passengers carried was $84,042 more than in 1933, or 4.58 per cent.

Increases in operating expenses were due primarily to higher material and labor costs influenced by NRA and other governmental activities, and also due to a moderate expansion in maintenance programs.

Train operation, both freight and passenger, was satisfactorily maintained during the year. The property is being maintained in condition to meet requirements of service.

Additions and Betterments

As result of writing off obsolete road property which has not been used for a number of years and is no longer required, there was a net decrease in road property investment of $1,150,000. The property retired consisted principally of old yard tracks and other terminal facilities which had previously been replaced with new and modern facilities.

Grade separations were completed at twelve crossings of streets and highways, all of which with the exception of one, were constructed by states using Federal funds and at no expense to the railroad.

The more important road improvements during the year were two warehouses at Houston, extension of freight house at Dallas and relaying three miles of 90-pound relay rail, replacing 85-pound and 90-pound rail.

The expenditures for new equipment and improvements to existing equipment amounted to $164,245, which principally consisted of air-conditioning three dining cars and miscellaneous improvements to locomotives and freight train cars. The amount of equipment retirements for the year, less replacements, was $8,050,667. There was a net decrease in value of equipment owned amounting to $7,886,422.

Industrial Development

During the year, 187 new industries and expansions, representing an investment of approximately $3,300,000, were established along the rails of this company. While the number of new industries is three less than in 1933, and the investment also shows a decrease, the large number of industrial prospects developed during the year is indicative of greater industrial development in our territory in the immediate future.

M. S. Sloan,
Chairman of the Board and President

[Advertisement]

News (Railway Officers)

(*Continued from page 785*)

Division, Association of American Railroads, died on May 13 at his home in Lehighton, Pa. Mr. Lentz, who had been

John S. Lentz

associated with the Lehigh Valley for 70 years, was a member of the M. C. B. executive committee as early as 1883 and in 1894-95 served as that organization's president; he was its treasurer from 1910 to 1919 and from the latter date until the time of his death he was a member of the Mechanical Division's General Committee. Mr. Lentz was born on October 29, 1847, at Mauch Chunk, Pa., and entered railway service in February, 1865, with the Lehigh Valley. He served consecutively until August, 1881, as storekeeper, clerk, operator, assistant to master car builder and acting master car builder. From September, 1881, to February, 1889, he served as master car builder and from February, 1889, to November, 1897, as superintendent of the car department. He served as assistant superintendent of motive power from November, 1897, to January, 1900, and from January, 1901, to July, 1928, he was master car builder. Mr. Lentz became consulting master car builder in July, 1928.

John V. Hanna, chief engineer of the Kansas City Terminal, Kansas City, Mo., who died suddenly on April 30, as noted in the *Railway Age* of May 4, was born in 1864 at Plattsmouth, Neb., and was educated at the Sheffield Scientific School, Yale university. His first railway service was with the Chicago, Burlington & Northern (now part of the Chicago, Burlington & Quincy) in 1885. In the following year he went with the Colorado Railway (now part of the Colorado & Southern) as assistant engineer, being appointed resident engineer of the Current River Railroad (now part of the St. Louis-San Francisco) in 1887. For a short time during 1888, Mr. Hanna served as assistant engineer on the Kansas City, Fort Scott & Memphis (now part of the Frisco) and in 1889 he engaged in mining activities in Colorado. In January, 1891, after serving for a time as a shop inspector in connection with the construction of the Thames River bridge, Mr. Hanna was appointed assistant engineer on the Kansas City, Memphis & Birmingham (now also part of the Frisco). Eight years later he was appointed a resident engineer on the K. C. F. S. & M., being advanced to assistant chief engineer of this road in 1900. In the following year Mr. Hanna was made assistant chief engineer of the

John V. Hanna

Frisco and in 1904 he was made principal assistant engineer, later serving as assistant engineer maintenance of way. In August, 1906, he was appointed chief engineer of the Kansas City Terminal, in which capacity he was in complete charge of the extensive terminal improvement project that included the construction of the present Union Station at Kansas City, Mo. He held the position of chief engineer of the Kansas City Terminal continuously until his death.

April 21, 1935

RAIL CROSSING BARRIER TESTED

2,000 See Exhibition of Safety Device.

Nearly 2,000 persons Sunday afternoon witnessed a demonstration of an electrically controlled automobile warning and highway barrier at E. Euclid ave. and the North Western railroad tracks, 2,000 feet east of E. Fourteenth st.

The device, the only one of its kind installed in the middle west, was formally dedicated in the interest of safety by state, county, city and railroad officials.

Barrier Rises.

The ceremony was broadcast over radio station KRNT and news reel pictures were made.

The automobile device is installed on both sides of the track, each about 75 feet distant from the track. The device is in operation now.

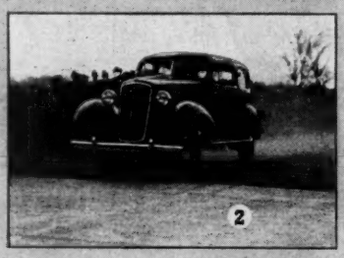
Resume Traffic Today.

The highway, closed for installation of the device, is to be reopened to traffic today.

After officials had explained and praised the operation of the barrier, a train approached the crossing at intervals as an automobile was used in demonstrating the action of the steel mechanism, which rises across the highway as a train approaches.

Four Inches.

When the train was 2,000 feet from the highway the barrier automatically rose to a height of four inches. Should an automobile run over the machinism the device



THOUSANDS WITNESS AUTO-STOP DEMONSTRATION AT DES MOINES, IOWA

THOUSANDS saw the official demonstration of the Auto-Stop—an electrically controlled highway warning and barrier for grade crossing protection. A train was nearing the crossing at high speed (picture 1). The Auto-Stop rose across the highway. The approaching automobile hit the fully raised barrier (picture 2) at a speed of about 40 miles per hour—the front wheels went over, but the barrier stopped the rear wheels. The steering mechanism was damaged slightly by the impact—but, the driver was not injured—and an accident prevented.

Auto-Stop provides positive grade crossing protection at the lowest cost. Write us now for information.

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2336 UNION GUARDIAN BUILDING • DETROIT, MICHIGAN

AUTO-STOP

FIRST, a 13-light WARNING *for ten seconds*
THEN, A BARRIER

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